The impact of migration on local (UK) food systems: opportunities and challenges for public health

OMOTOMILOLA MOSOPEFOLUWA AJETUNMOBI

Thesis submitted in accordance with the requirements for the degree of

Doctor of Philosophy
of the
University of London

2024

Department of Public Health, Environments and Society

Faculty of Public Health and Policy Faculty

LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE

Funded by National Institute of Health Research (NIHR)
School of Public Health Research (SPHR)

Research group affiliation: SPHR

London School of Hygiene & Tropical Medicine
Keppel Street, London WC1E 7HT
T: +44 (0)20 7299 4646
F: +44 (0)20 7299 4656
www.lshtm.ac.uk

DECLARATION OF OWN WORK

All students are required to complete the following declaration when submitting their thesis.

Please note: Assessment misconduct includes any activity that compromises the integrity of your research or assessment of is will be considered under the Assessment Irregularity Policy. This includes plagiarism, cheating and failure to follow correct progression and examination procedures.

Please see the following documents for further guidance:

- Research Degrees Handbook
- Assessment Irregularities Policy

Supervisors should be consulted if there are any doubts about what is permissible.

i) STUDENT DETAILS

Student ID Number	1803241	**Title**	Ms
First Name(s)	Omotomilola		
Surname/Family Name	Ajetunmobi		
Programme of Study	PhD		
LSHTM Email (if this is no longer active, please provide an alternative)	tomi.ajetunmobi@lshtm.ac.uk		

ii) TITLE OF THESIS

Title of Thesis	The impact of migration on local (UK) food systems: opportunities and challenges for public health

iii) DECLARATION

I have read and understood the LSHTM's definition of plagiarism and cheating. I declare that this thesis is my own work, and that I have acknowledged all results and quotations from the published or unpublished work of other people.

I have read and understood the LSHTM's definition and policy on the use of third parties (either paid or unpaid) who have contributed to the preparation of this thesis by providing copy editing and, or, proof reading services. I declare that no changes to the intellectual content or substance of this thesis were made as a result of this advice, and, that I have fully acknowledged all such contributions.

I have exercised reasonable care to ensure that the work is original and does not to the best of my knowledge break any UK law or infringe any third party's copyright or other intellectual property right.

Student Signature	Omotomilola Ajetunmobi
Date	14/09/2024

Abstract

Place, which plays a focal role in framing health inequalities, is gaining increasing attention in the food system, through the transformation of its context and composition. Migration, the movement of people, things and ideas, is also a key feature in the transformation of place that shapes the food system. As a frame, place integrates multiple social, economic, cultural and structural factors across different levels, manifest through the lived experiences of its various actors.

In the UK, Brexit and the more recent socio-economic crises have brought place into sharp focus, exposing food system vulnerabilities and unequal patterns of food production, security, sustainability, consumption and outcomes. These gaps reinforce calls for public health to recognise the complex linkages of people in place, in order to design effective local policies for population health.

In this thesis, I employed a mixed-method design and conceptual framework underpinned by Lefebvre's spatial theory and Doreen Massey's concept of space to explore the interaction between people and place. The research had three main objectives.

1. To review the literature for evidence of migration on the food environment, including a qualitative evidence synthesis of host experience of (migrant) ethnic food;
2. To explore local experiences of food places through a comparative case study of two areas with a high and low migrant density (qualitative) and
3. To determine the association between UK household food purchases and migrant density using linked Census - Kantar Fast Moving Consumer Good (FMCG) Panel data (quantitative)

The findings, which suggest implications for public health policy, elucidate the importance of context that operates across scales in place; the fluidity of boundaries and complexity of cultural appropriation.

Acknowledgements

I am grateful to God, who gives life, for the privilege of time, people and opportunity.

I would like to acknowledge the support and kind encouragement of my supervisors, Professor Matt Egan, Dr Dalya Marks and Dr Nicholas Berger on my PhD journey– thank you very much for sharing of your knowledge and wisdom. I am also grateful to Professor Karen Lock, Professor Sarah Salway, who formed my advisory team and Dr Laura Cornelsen who facilitated access to the Kantar Fast Moving Goods Consumer panel data used in my research.

I am grateful to all the research participants who agreed to be interviewed and or took part in the photovoice workshops and exhibitions, thank you for being a part of my study and trusting me to tell your stories. The staff and management of the Shoreditch Trust, Xenia Women's forum, Hull All Nations Alliance, Open Doors, Goodwin Trust; staff of Markets, Environments, Public Health and Strategic Policy units of Hackney and Environmental and Public Health units of Hull Council contributed greatly to the insights gained during this research. I especially thank the coordinators of the organisations who supported the photovoice workshops conducted as the COVID restrictions were being relaxed. It was a difficult time to restart active research and their flexibility and enthusiasm for the project made a big difference.

Many colleagues have shared in my time at the University and provided valuable guidance, insights and practical help. I would like to acknowledge among many, 'senior' colleagues from the 'Annex' for their advice, helpful pointers and encouragement (Katya, Elizabeth, Sue, Dorota, Vanessa, Kerry, Nason and Greg) and especially Mirela, who travelled to help at the first photovoice workshop in Hull. I also appreciate the 'fellowship' of those with whom I have shared more than office space particularly - Kay, Chiara, Nikita, Rahab, Julia, Lily, Lola, Nuri and especially the wise counsel and insights of Joelle – thank you.

I acknowledge, with thanks, the generous funding provided by the National Institute of Health Research (NIHR), School of Public Health (SPHR) scholarship that made the research possible and the resources and staff support (especially PHP, IT, Security, Library and RD) at the London School of Hygiene and Tropical Medicine.

Finally, I would like to thank my family, especially my parents, Mr and Mrs S.O Ajetunmobi, extended family and friends, who have cheered me on these last few years; it is difficult to put fully into words what it has meant…I thank you all.

Contents

Abstract 4

Acknowledgements 5

List of Tables 9

List of Figures 9

Chapter 1: Overview of the Thesis 10

Background 10

1.1 Introduction 10

1.2 Aims and Objectives 11

1.3 Thesis Summary 12

1.4 Thesis structure 14

1.5 Role of the candidate 14

1.6 Ethical considerations 14

1.7 References 15

Chapter 2: Literature review 19

Background 19

2.1 Introduction 19

2.2 Concepts of Place 20

2.2.1 Lefebvre's Social Production of Space 20

2.2.2 Massey's Multiplicity of Place 21

2.3 Conceptual Framework 22

2.4 Migration and the food system 26

2.4.1 Migration Definitions and Boundaries 26

2.4.2 Immigrants in the UK 28

2.4.3 Migrants in the local UK Food System 30

2.5 Uneven places, policies and practices 31

2.6 The Food System 35

2.7 Public Health Policy, Migration and Local Food Systems 38

2.8 References 41

Chapter 3: Methods 52

Background 52

3.1 Introduction 52

3.2 Study Aims/Objectives 53

3.3 Study Questions 53

3.4 Study Design 54
3.5 Qualitative component 56
3.5.1 Overview of Study Setting and Participant Selection 57
3.5.2 Participant selection: Stakeholder interviews 58
3.5.3 Participant selection: Retailer Interviews 59
3.5.4 Participant selection: Residents 60
3.6 Reflections 71
3.7 Qualitative Analyses 74
3.8 Quantitative Component 75
3.8.1 Introduction 75
3.8.2 Aim 78
3.8.3 Objectives 78
3.8.4 Methods 79
3.8.5 Data Preparation and Linkage 82
3.8.6 Exposure and Outcome variables 82
3.8.7 Other Measures 83
3.8.8 Diagrammatic relationship between migrant density and diet adequacy 84
3.8.9 Quantitative Data Analysis 87
3.9 References 88
Chapter 4: Results: Qualitative Evidence Synthesis 98
Background (Journal article) 98
Chapter 5: Qualitative Results 135
Background 135
5.1 Introduction 135
5.2 Kingston-Upon-Hull 136
5.3 Hackney, Borough of London 160
5.4 Discussion/Summary 173
5.5 Implications for Public Health 181
5.6 References 182
Chapter 6: Quantitative Results 183
Background 183
6.1 Introduction 183
6.1.1 Overview of the Kantar FMCG 2012 Panel 184
6.1.2 Characteristics of the Kantar FMCG 2012 Panel 185
6.1.3 Excluded households 186

6.2 Migrant density and Kantar FMCG 2012 Households ... 186
6.3 Measures of Diet Quality ... 191
Measures of Diet Inadequacy ... 191
6.3.1 Proportion of kilocalories from UK NPM Score 'Less Healthy' kilocalories ... 191
6.3.2 Proportion of kilocalories from Ultra-processed foods ... 192
Measures of diet adequacy ... 193
6.3.3 Proportion of kilocalories purchased from fruit and vegetables ... 193
6.3.4 Proportion of kilocalories purchased from diverse foods ... 194
6.4 Discussion ... 199
6.5 Conclusion ... 201
6.6 References ... 203
Chapter 7: Synthesis and Conclusion ... 206
Background ... 206
7.1 Summary of Key Findings ... 206
7.2 Contributions to Knowledge: The Place-based Approach ... 207
7.3 Implications for Public Health Policy ... 211
7.4 Study Limitations ... 213
7.5 Conclusions ... 214
7.6 References ... 215
Appendix 1: Ethical approval ... 217
Appendix 2: Consent for use of Kantar FMCG Panel 2012 dataset ... 221
Appendix 3: Qualitative Evidence Synthesis Review Protocol ... 222
Appendix 4: Research Consent Forms and Study Information Sheets ... 226
Appendix 5: Quantitative Results – Detailed notes ... 238

List of Tables

Table 1. Comparative overview of case-study areas 57
Table 2. Case Study Participants: Stakeholder interview 58
Table 3. Case study participants: Retailer interviews 60
Table 4. Case study participants: Resident interviews 61
Table 5. Description of Hull Photovoice Participants 67
Table 6. Description of Hackney Photovoice Participants 68
Table 7. Description of Migrant density in Kantar FMCG Households (n=16,328) 188
Table 8. Measures of Diet Quality in the Kantar FMCG 2012 panel (n=16,328) 195
Table 9 Models of Migrant Density and Measures of Diet Quality in Kantar FMCG Households 198

List of Figures

Figure 1. Conceptual Framework 25
Figure 2. Diagrammatic representation of study objectives and methods 56
Figure 3. DAG for migrant density and diet quality (simplified 85
Figure 4. DAG for migrant density and food quality (network version) 86
Figure 5. Gluten-free Ginger beer 141
Figure 6. The 'Big' Kitchen 142
Figure 7. The 'Small' Kitchen 142
Figure 8. 'The Long Road' 149
Figure 9. The Ethiopian Meal 150
Figure 10. COVID Banquet 151
Figure 11. The 24-hour supermarket 153
Figure 12. "Que sera, sera" 155
Figure 13. 'In my neighbour's house' 155
Figure 14. 'Pure milk?' 157
Figure 15. Local diversity 166
Figure 16. Ridley Road Market 167
Figure 17. The Open Market 168
Figure 18. 'Taking care of myself' 170
Figure 19. The Ethiopian Place 171
Figure 20. Use by or best before? 172
Figure 21. Kantar FMCG 2012 Panel Flow Chart 185
Figure 22. Kantar FMCG 2012 Panel Household distribution by Migrant density 187
Figure 23. Household purchases of 'Unhealthy' foods 191

Chapter 1: Overview of the Thesis

Background

This chapter introduces the thesis and includes a structural outline for subsequent chapters. It comprises a brief introduction to health inequalities in place, which remain a significant challenge for public health policy. The chapter outlines the need for research that conceptualises how interactions between people and places shape inequalities. It briefly describes the aims of the study designed to address this gap by exploring the impact of migration on local food places, applying the concepts of space, as a product of social interactions, proposed by Henri Lefebvre (1991) and Doreen Massey (2005).

1.1 Introduction

It is widely accepted that 'places make people' and 'people make places'. There has been a focus on which features of context or composition contribute to unequal health outcomes (Cummins et al, 2007; MacIntrye et al., 2002); themes reflected in food and public health policy that direct interventions at people (i.e., individual behaviour) or places (i.e., the food environment), with minimal effect on health (Bosco & Jossart-Marcelli 2018; Caspi et al., 2012; Herforth & Ahmed, 2015; Lytle & Sokol 2017; Mozaffarian et al., 2018; Townsend & Lake 2016, Vallgårda, 2015).

There is however a growing call for transdisciplinary research that examines the nexus between people and place, otherwise known as a relational approach (Bosco & Jossart-Marcelli 2018; Carrus et al, 2018; Coulson & Sonnino, 2019; Frison et al., 2020; Sonnino et al., 2016). A relational approach, which has the potential to integrate the complex politics, economics, society, culture, history and geography of inequalities in place, that shape individual and collective experiences – a concept described by Lang et al., (2019) as an 'ecological public health'.

Assessing the complex routes and roots of inequalities requires a mix of data (both qualitative and quantitative) and concepts that analyse and make sense of the information (Carrus et al., 2018; Popay et al., 1998). The concepts of place - proposed by Henri Lefebvre (1901 -1991), a philosopher and Doreen Massey (1944-2016), a geographer - have been used as analytical tools to explore the relationship(s) between people and places (Cresswell, 2010; Nikoleavea et al., 2017; Sheller, 2017; Sonnino & Milbourne 2022) – covered fully in Chapter 2. The crux of their work presented (principally) in the Production of Space (Lefebvre, 1991) and For Space (Massey, 2005), explored space as the product and an 'active mediator' of the interactions within it (Sonnino et al., 2016).

Place (or space, terms that will be used interchangeably in this thesis) is described as a social construct; a site of various complex social interactions, which are hierarchical and inherently political. As Marxist thinkers, they highlighted the (uneven) 'flows' of capital that shaped social interactions, and proposed inter-related elements to examine the social (re)production of space.

In this thesis, I explore the interaction between people and place through the impact of migration on local food systems, using the concepts of space proposed by Lefebvre (1991) and Massey (1994,2004, 2005).

Migration is an integral feature of place. The movement of people, ideas and things is a human quality that frames, and is framed by, place (i.e., people move from 'place to place'). Migration is a precursor and outcome of social transformations (Castles & Miller, 2000); a harbinger of diversity in place. This transformation is particularly evident in the food system. Migration transmits knowledge, promotes culture, diversifies commodities and underpins the labour that drives economies (Carrus, et al., 2018; Galae et al., 2019); features which are reflected across the food system (Abbots, 2017; Kershen, 2002; Panayi, 2008; Rye & Scott, 2018).

In the UK, there are varying patterns of migration across diverse milieus termed 'super-diversity (Vertovec, 2007). These patterns, underlined by multiple government policies, have contributed to the complex distribution of people across different - ethnic, religious, socio-demographic and cultural - backgrounds with a wide variation in accorded rights, privileges and opportunities; shaping places that embed different layers of inequality (Grzymala-Kazlowska, & Phillimore, 2018).

The food insecurity of migrants, otherwise known as dietary acculturation, is well researched (Alidu et al., 2018; Andreeva & Unger 2014; Fox et al., 2017; Satia-Abouta et al., 2002) and associated with socio-economic including technological, inequalities that can lead to poor health outcomes (Berggreen-Clausen et al., 2022; Dixon et al., 2007; Hawkes, 2006; Popkin, 2017; Szabo, 2021). However, little is known about the impact of migration on the dietary acculturation of host populations (Andreeva & Unger, 2014) or the local food environment and vice-versa (Abbots, 2017).

1.2. Aims and Objectives

This mixed methods study (simultaneous design) aimed to explore the interaction between people and place underpinned by the theories proposed by Henri Lefebvre's spatial theory (1991) and Doreen Massey's 'multiplicity of space' (1994, 2005). It had three objectives:

i) To review the influence of migration on UK food environments, including a qualitative evidence synthesis of host experiences of ethnic food.

ii) To conduct a comparative exploration of local food environments in the context of migration, using local areas with high/low migrant density, through the experiences of local stakeholders and its residents (qualitative).

iii) To examine the association between migrant density and food purchasing patterns of UK households using market research data (quantitative).

1.3 Thesis Summary

This mixed methods, interdisciplinary study applied a critical pluralist epistemology to explore the interaction between people and place. The critical pluralist epistemology is most suited to the examination of complex systems, which have varying inputs, outputs, interests and power dynamics (Healy, 2003; Leeuwis et al. 2021; Miller et al., 2008). The epistemology, is also well suited to inter-disciplinary research and provides a wholistic view using different forms of knowledge to explore phenomena (Miller et al., 2008).

Combining Lefebvre and Massey's concepts of space identified ontological realities produced from social interactions of places and people. The findings showed that local food spaces were enriched by both internal and international migration, which extended and diversified local networks. Diversity contributed to the multiplicity and commodification of available foods, food knowledge and food spaces. As an analytical tool, the conceptual framework exposed invisible practices, patterns and 'routes' to unequal access that linked associated needs and factors (socio-economic, cultural, historical and political) through interactions in different spaces. It also highlighted potential opportunities to intervene by collaborating across a range of food/non-food sectors.

Each of the study objectives highlighted the complexity of active interactions fostered by the mix of places (including virtual spaces), people, ideas and governance structures.

Objective 1: Qualitative evidence synthesis

The first objective was a literature review which comprised a qualitative evidence synthesis on the host experiences of ethnic food. The synthesis included 14 journal articles and identified three main themes. The interactive themes were the commodification, emplacement and pedagogy of ethnic

food. The findings demonstrated how important interactions of various political, cultural, material and relational contexts, at different levels, shaped food experiences in place.

Objective 2: Mixed qualitative case study

The second component, which was a mixed qualitative case-study of two local areas – Kingston-Upon-Hull (lower migrant density) and Hackney Borough of London (greater migrant density), comprised photovoice workshops and semi-structured interviews with stakeholders, retailers and residents. The findings showed that migration as a measure of difference had multiple meanings, which created various types of networks, representations of space, representational spaces and spatial practices. In Hull, the new immigrant settlements produced new forms of interaction that positively impacted the economy. However, access to these new spaces was restricted to those with cultural, social or economic capital. In Hackney, where diversity was 'commonplace', the impact of migration was also evident – internal migration and tourism – several interactive factors combined to create spaces, which displaced long-term residents. Attention to the various interactions in place can provide new insights to inform public health policy and practice.

Objective 3: Linked Census and Kantar FMCG Panel data

This analysis aimed to contribute to the research on the interaction between place and people by examining the spatial practices of households in places defined by the composition of the population. I examined the association between migrant density and food purchasing practices of a representative sample of 16,328 households across the UK. Migrant density was defined as non-UK birth measured as a proportion of the whole population in lower layer super output areas - LSOAs (LSOAs comprised about 700 households).

To achieve this aim, household purchasing practices were characterised using two measures of diet adequacy (proportion of kilocalories purchased from fruit and vegetables and diet diversity scores based on the UK eat well plate) and two measures of diet inadequacy (proportion of kilocalories purchased from foods high in fats, sugars and salts -HFSS and ultra-processed foods). Overall the results showed an independent association between migrant density and three of the four measures, after adjustment for regional, main shopper and household characteristics. Households purchased more kilocalories from fruits and vegetables (as a proportion of all purchases) but fewer kilocalories from ultra-processed foods (as a proportion of all purchases) as the migrant density of the LSOAs increased. There was also less dietary diversity of household food purchases with increasing migrant density.

1.4 Thesis structure

The layout of the thesis, which follows LSHTM guidelines, comprises a 'hybrid' thesis and journal paper style format. It is made up of seven chapters that starts with an introduction to the study (Chapter 1). The literature review in Chapter 2 provides an overview of food systems, migration and the place-based approach, with particular focus on the UK context. It also integrates concepts of place proposed by Lefebvre (1991) and Massey (1994, 2005) in a conceptual framework to demonstrate the interaction between place and people. Chapter 3 outlines the study methods for each objective, an overview of the mixed-methods approach and researcher positionality. Chapters 4-6 present findings of the qualitative evidence synthesis, comparative case study and the quantitative analyses of market research data respectively. Chapter 7 summarises the whole study with a discussion on the implications for food and public health policy.

1.5 Role of the candidate

I led on the conceptualisation and development of the research project under the direction and guidance of my supervisors. This included sourcing relevant data, organising data collection, analyses and writing. I was the lead author for the research paper, included as part of the results in Chapter 4, and led the process of review and writing with input from co-authors as detailed on the Research Cover Sheet.

1.6 Ethical considerations

The London School of Hygiene and Tropical Medicine Ethics Committee provided ethical approval for this study (Ref: 17810); an amendment was added to the ethics application to include online photovoice workshops (due to restrictions during the COVID19 pandemic). Details of the ethics application may be found in Appendix 1.

1.7 References

Abbots, E., J. In J.A. Klein and J.L. Watson (Eds.). *The Handbook of Food and Anthropology (pp.115-132)*. New York. Bloomsbury Academic

Alidu, L., & Grunfeld, E., A. (2018). A systematic review of acculturation, obesity and health behaviours among migrants to high-income countries. *Psychology & Health*, *33*(6), 724–745. https://doi.org/10.1080/08870446.2017.1398327

Andreeva, V. A., & Unger, J. B. (2014). Host society acculturation and health practices and outcomes in the United States: Public health policy and research implications worldwide. *Journal of Public Health Policy*, 35(3), 278–291. https://doi.org/10.1057/jphp.2014.9

Berggreen-Clausen, A., Hseing Pha, S., Mölsted Alvesson, H., Andersson, A., & Daivadanam M. (2022). Food environment interactions after migration: a scoping review on low- and middle-income country immigrants in high-income countries. *Public Health Nutrition*, 25(1),136-158. DOI: 10.1017/S1368980021003943

Bosco, F. J., & Joassart-Marcelli, P. (2018). Relational space and place and food environments: geographic insights for critical sustainability research. *Journal of Environmental Studies and Sciences*, *8*(4), 539 - 546 https://doi.org/10.1007/s13412-018-0482-9

Carrus, G., Pirchio, S., & Mastandrea, S. (2018). Social-cultural processes and urban affordances for healthy and sustainable food consumption. *Frontiers in Psychology*. https://doi.org/10.3389/fpsyg.2018.02407

Caspi, C. E., Sorensen, G., Subramanian, S. V., & Kawachi, I. (2012). The local food environment and diet: A systematic review. *Health and Place,* 18(5), 1172–1187. https://doi.org/10.1016/j.healthplace.2012.05.006

Castles, S., & Miller, M., J. (2009). The Age of Migration: international population movements in the modern world. Palgrave Macmillan. Basingstoke, England, New York.

Coulson, H., & Sonnino, R. (2019). Re-scaling the politics of food: Place-based urban food governance in the UK. *Geoforum*, *98*,170-179 https://doi.org/10.1016/j.geoforum.2018.11.010

Cresswell, T. (2010). Towards a politics of mobility. *Environment and Planning D: Society and Space*, *28* (1), 17- 31 https://doi.org/10.1068/d11407

Cummins, S., Curtis S., Diez-Roux, A.V., Macintyre, S. (2007) Understanding and representing 'place' in health research: a relational approach. *Social Science and Medicine*.,65(9),1825–1838.

Dixon, J., Omwega A.M., Friel. S., Burns C., Doneti, K., & Carlisle, R. (2007). The health equity dimensions of urban food systems. *Journal of Urban Health,* 84 (Suppl 1),118 - 129

Fox, M., Thayer, Z., Wadhwa, P.D., (2017). Acculturation and health: the moderating role of socio-cultural context. *American Journal of Anthropology*, 119(3),405-421. doi: 10.1111/aman.12867.

Frison, E., & Clément, C. (2020). The potential of diversified agroecological systems to deliver healthy outcomes: Making the link between agriculture, food systems & health. *Food Policy*, *96*, 101851 https://doi.org/10.1016/j.foodpol.2020.101851

Galea, S., Ettman, C.K., & Vlahov, D. (2019). Why cities and health? Cities as a determinant of health. In: S. Galea, C. K. Ettman, D. Vlahov. (eds), *Urban Health*. 1st Edition New York. Oxford University Press

Grzymala-Kazlowska, A., & Phillimore, J. (2018). Introduction: rethinking integration. New perspectives on adaptation and settlement in the era of super-diversity. *Journal of Ethnic and Migration Studies*., 44(2), 179- 196 https://doi.org/10.1080/1369183X.2017.1341706

Hawkes, C. (2006) Uneven dietary development: linking the policies and processes of globalization with the nutrition transition, obesity and diet-related chronic diseases. *Global Health*, 2 (4) https://doi.org/10.1186/1744-8603-2-4

Healy, S. (2003). Epistemilogical pluralism and the politics of choice. *Futures*, 35 (7): 689 – 701

Herforth, A., & Ahmed, S. (2015). The food environment, its effects on dietary consumption, and potential for measurement within agriculture-nutrition interventions*. Food Security*, 7(3), 505–520. https://doi.org/10.1007/s12571-015-0455-8

Kawachi, I., & Berkman, L.F., (2003). Introduction. In. I Kawachi and L.F. Berkman (eds). *Neighbourhood and Health*. (pp. 1-8). Oxford. Oxford University Press

Kershen, A. (2002). *Food in the Migrant Experience* London, Ashgate

Lake, A. A. (2018). Neighbourhood food environments: Food choice, foodscapes and planning for health. *Proceedings of the Nutrition Society*, *77*(3), 239–246. doi:10.1017/S0029665118000022

Lang, T., & Rayner, G. (2012). Ecological public health: the 21st century's big idea? An essay by Tim Lang and Geof Rayner. *British Medical Journal*, *345*, e5466. https://doi.org/10.1136/bmj.e5466

Leeuwis, C., Boogaard, B.K. & Atta-Krah, K. (2021). How food systems change (or not): governance implications for system transformation processes. *Food Security*,13, 761–780 https://doi.org/10.1007/s12571-021-01178-4

Lefebvre, H. (1991). *The Production of Space* (translated by D. Nicholson-Smith). Malden: Blackwell Publishing

Lytle, L. A., & Sokol, R. L. (2017). Measures of the food environment: A systematic review of the field, 2007–2015. In *Health and Place*, 44, 18 - 34 https://doi.org/10.1016/j.healthplace.2016.12.007

Macintyre, S., Ellaway, A., Cummins, S. (2002) Place effects on health: how can we conceptualise, operationalise and measure them? *Social Science & Medicine* 55(1),125–39

Massey, D. (1994). Space, Place and Gender. Cambridge. Polity Press.

Massey, D., (2004). Geographies of responsibility. *Human Geography*. 86 (1), 5-18

Massey, D., (2005). *For Space*. Sage. London, California, New Delhi.

Miller, T. R., Baird, T. D., Littlefield, C. M., Kofinas, G., Chapin, F. S., & Redman, C. L. (2008). Epistemological Pluralism: Reorganizing Interdisciplinary Research. *Ecology and Society*, *13*(2), 46. http://www.jstor.org/stable/26268006

Mozaffarian, D., Angell, S. Y., Lang, T., & Rivera, J. A. (2018). Role of government policy in nutrition-barriers to and opportunities for healthier eating. *British Medical Journal*, 361, p2426. https://doi.org/10.1136/bmj.k2426

Nikolaeva, A., Adey P., Cresswell T., Lee YJ, Novoa A, Temenos C. (2017). A new politics of mobility: communing movement, meaning and practice in Amsterdam and Santiago. Centre for Urban Studies. *Working Paper Series. No 26.*

Panayi, P., (2008). *Spicing up Britain: A multicultural history of British food* (1st Ed.). London. Reatkion Books

Parham, S. (2020). Exploring food and urbanism. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability* ,13(1),1-12 DOI: 10.1080/17549175.2020.1721152

Popay, J., Williams, G., Thomas, C., Gatrell, T. (1998). Theorising inequalities in health: the place of lay knowledge. *Sociology of Health and Illness*, 20(5),619 – 644 https://doi.org/10.1111/1467-9566.00122

Popkin, B., (2017). Relationship between shifts in food system dynamics and acceleration of the global nutrition transition. *Nutrition Reviews,* 75(2),73 – 82

Rye, J. F., & Scott, S. (2018). International labour migration and food production in rural Europe: a review of the evidence. *Sociologia Ruralis*, *58*(4), 928-952.

Satia-Abouta J., Patterson, R. E., Neuhouser, M. L., & Elder, J. (2002). Dietary acculturation: applications to nutrition research and dietetics. *Journal of the American Dietetic Association*, 102 (8),1105-111 https://doi.org/10.1016/S0002-8223(02)90247-6

Sonnino, R., Marsden, T., Moragues-Faus, A. (2016). Relationalities and convergences in food security narratives: towards a place-based approach. *Transactions of the Institute of British Geographers,* 41(4), 477 – 489

Sonnino, R., & Milbourne, P. (2022). Food system transformation: a progressive place-based approach. *Local Environment*, *27*(7): 915- 926 https://doi.org/10.1080/13549839.2022.2084723

Szabo, A. (2022). Addressing the causes of the causes: Why we need to integrate social determinants into acculturation theory. *International Journal of Intercultural Relations*. 91. 1-12

Townshend, T., & Lake, A. (2016). Obesogenic environments: Current evidence of the built and food environments. *Perspectives in Public Health*, 137(1),38-44 https://doi.org/10.1177/1757913916679860

Vallgårda, S. (2008). Social inequality in health: Dichotomy or gradient? A comparative study of problematizations in national public health programmes. *Health Policy*, *85*(1), 75-82. https://doi.org/10.1016/j.healthpol.2007.07.004

Vertovec, S. (2007). Super-diversity and its implications. Ethnic and Racial Studies, 30(6), 1024–1054. https://doi.org/10.1080/01419870701599465

Chapter 2: Literature review

Background

This chapter presents the theoretical concepts for this thesis designed to explore the impact of migration on local food systems. The chapter also summarises recent literature on migration, the food system, place and public health policy with a focus on the UK. It includes a conceptual framework, based on the work of Henri Lefebvre (1991) and Doreen Massey (2005) that shows the inter-linkages between people and places.

2.1 Introduction

Vallgarda's (2015) compelling review of social inequality policies and national public health programmes underscored the importance of framing for public health policy. Frames, which condense discourses of issues, how they are described, explained and potentially addressed; in other words, how issues are 'problematised', are powerful engines, which drive political agendas.

Both Henri Lefebvre and Doreen Massey recognised the importance of frames for political action. Their work challenged the siloed empirical 'problematisations' of place (prevalent at the time) as a static concept, and demonstrated place as a dynamic concept and a product of social interactions. Their work, which explored the interaction of actors, processes and practices has been used to understand complex phenomena and applied in multidisciplinary research, including research on mobilities and the spatial turn – both of which are central to this thesis.

This thesis aimed to test the value of these complementary approaches for understanding the complexity of local food systems. The following sections outline the key concepts from the work of Lefebvre (1991) and Massey (2005), presented visually in a conceptual framework and highlighted in a review of the literature on migration, food systems and place.

2.2 Concepts of Place

2.2.1 Lefebvre's Social Production of Space

Henri Lefebvre (1901 – 1991) was a French Marxist philosopher whose work, the 'Production of Space', was originally published in French in 1974 (translated to English in 1991). It provided a critical framework for understanding space in everyday lived experiences, through an analysis of social interactions i.e., space examined not only for its functional value or its role in capital accumulation but as 'a multitude of intersections' (Lefebvre, 1991: 33).

Lefebvre described space as both a process and product of the (hierarchical) relations within it or quoting Fuchs (2019), 'always and simultaneously the field and basis of action' that integrated superstructures such as socio-economic, historical, customs, political and demographic institutions, which occurred in time (Zieleniec, 2018). To Lefebvre (1991), the product and production process were like two sides of a coin, explored through by-products ('partial-products') that resulted from inter-related sets of relations, namely production and reproduction, which operated across different levels. This understanding created possibilities for (re)shaping place to meet societal needs (Zieleniec, 2018).

Furthermore, Lefebvre described three inter-related elements of social space namely:

i) Spatial practice: This element describes the 'performance' of an actor's 'competence' based on the (perceived) prerequisite or outcome of interactions in space. Also referred to as the 'perceived space, it varies by actor and context and produces a range of experiences expressed in various ways; 'public', 'private', 'overt', 'covert', passive', or 'repressed' (Lefebvre, 1991). Spatial practice allows actors to use their knowledge to logically and consistently negotiate relations in space (Zieleniec, 2018).

ii) Representations of space: Also referred to as the conceived space reflects the relations of production or dominant discourses that is determined by the state and the flow of capital. It combines ideology and knowledge to establish rules of engagement. The representation of space is also described as the abstract space of planners or administrators that is characterised by organisation, order or control (Lefebvre, 1991; Zieleniec, 2018).

iii) Representational space: embodies the complex symbols or meanings attributed to lived space (Lefebvre, 1991) that are culturally created, stored and disseminated (Fuchs, 2019) and can be subversive. Representational space does not conform to rules of consistency or cohesion (Lefebvre, 1991; Zieleniec, 2018).

2.2.2 Massey's Multiplicity of Place

Doreen Massey (1944-2016) was a British Marxist human geographer. Her reflections of space published in 'For Space' (2005) and in other formats (as books and journal articles), sought to reclaim the science of geography as a subject engaged with lived realities. She argued that place included the historical, social, political, economic and ethical content of power-relations in time; where space and time i.e., 'spatio-temporal' events, were a dynamic and an integral component of place and not a static representation as depicted on maps (Clout, 2007; Massey, 2005).

Her work introduced space as a heterogenous product of social relations (the multiplicity of space) that changed continuously (unbounded). She explored place, as a node of different interactions, influenced by the impact of movements (flows) that were constantly being (re)produced; a "simultaneity of the stories so far" (Massey, 2005; 32), which also gave space its identity. Through their routes, the flows contributed to the heterogeneity and openness of place and gave (new) value(s) to the assets and features of place. Like Lefebvre, Massey drew attention to the politics or as she put it - the geometries of power in space - that was constantly negotiated by actors, who experienced and influenced space in different ways with time. Hence, no two spaces could be identical. Each space has a dynamic identity that is socially constructed from the social and hierarchical interactions within it (Massey, 1994, 2005).

Both Lefebvre and Massey applied critical insights to the theory of place informed by Marxist's views that emphasised power relations and its role in capital accumulation. Each offered a similar understanding of space as an active mediator and social construction of diverse, dynamic and porous interactions that produced a 'sphere of possibilities (Lefebvre, 1991; Massey, 1999).

However, each brought a different approach to the analysis of space. While Lefebvre's (1991) philosophical treatise characterised the relations and processes of space, identifying different elements generated from the inter-connections; Massey's (1994, 2005) geographical frame characterised the by-products of space, emphasising the hegemonic or dominant power relations

that shaped the flows and thus the identity of place. Her arguments focused directly on challenging static notions of boundaries that overlooked hegemonic interests in the representation of space.

For this thesis, the complementary approaches of both Lefebvre and Massey were combined to provide a rich or more wholistic (some could say "system-level") understanding of place; noting its dynamic nature. Lefebvre's tripartite conceptualisation, which identified the physical and material representations and use of space in everyday practices, (symbolic) understandings of social relations combined with Massey's more fluid conceptualisations of space that underscored its scope, diversity, structural (and technological) links and power geometries.

2.3 Conceptual Framework

This study explored how places changed people and people changed places or in other words, how food places shaped consumer practices and vice versa. The conceptual framework (Figure 1) adapted the concepts of space by Lefebvre (1991) and Massey (2005) to illustrate how local (food) places become a social product of on-going - social, political, historical, demographic and cultural - interactions.

As both Massey (1994, 2005) and Lefebvre (1991) emphasised, place is a dynamic and active agent, that is intricately linked to the flows or patterns of migration, which reflect the hegemonic realities within it. An understanding of 'who' or 'what' moves, 'how' and 'when' being as important as what settles or remains immobile (Shelly & Urry, 2016); the ability to move, being a stratifying factor (Schependonk, 2012). Furthermore, movements could be physical, virtual or imaginative and comprise of people, objects or information that journey through a variety of media (Shelly & Urry, 2016); at different rates, scales and levels of friction (Cresswell, 2010). Lefebvre's (1991) triad concepts, integrate the complexity of movements and non-movements (i.e., heterogeneity, openness) described by Massey (1994, 2005) to produce space and give it its character (and its actors their experience).

The conceptual framework developed for this thesis (Figure 1) adapted a place-based approach to illustrate the interaction between place and people using the relational concepts of space proposed by Lefebvre (1991) and Massey (1994, 2004). The framework emphasised the inter-connections in place notably between people, governance/policies, social norms and ideas that (re)produced (food) place characteristics. These place characteristics were summarised by Lefebvre's triad of spatial practice, representations of space and representational space, intertwined

with Massey's dynamic, unbounded and heterogenous concepts of place. The framework showed the interconnected flows of people, ideas/things and capital enabled by government policies in place.

Migration gives place its character through the pattern of flows, which (re)create structures in place – itself a complex system (Castellini et al., 2015) – through the practices that take place within it, the meanings attributed to it and the meanings it adopts. For migrants, this transformation of place includes the place of origin, destination and thoroughfares, which all adapt to the flows. The diversity of these transformations is observed in the pattern of practices, processes and infrastructure (e.g., remittance centres, transport services, migrant/ cultural economies, goods and services, governance, border controls, policies, surveillance systems etc) that emerge to manage, aid or resist the flows (Sheller, 2017) and give place its (changing) character.

In the contextual diagram, place is depicted (in the circle) as an active agent with a material identity described by Massey's 'sense of place' and characterised by interactive patterns formed by the mix of people (left-handed bar), governance structures/institutions (top-bar) and ideas, norms and value systems (right-handed bar). The interactions are shaped through practices (double-ended arrows), which connect the different components of place. Each of the component bars have porous boundaries linking the sub-components to each other and to place. Place also comprises 'immobile' components (interspersed double-ended arrows) through which practices shape and take shape from place. The complex mix of interactions in place, 'funnelled' through Massey's complex heterogeneity of experiences (multiplicity), inherent power dynamics (which determine access to resources) and unbounded nature of place are expressed in Lefebvre's triad of spatial practice, representational space and representations of space.

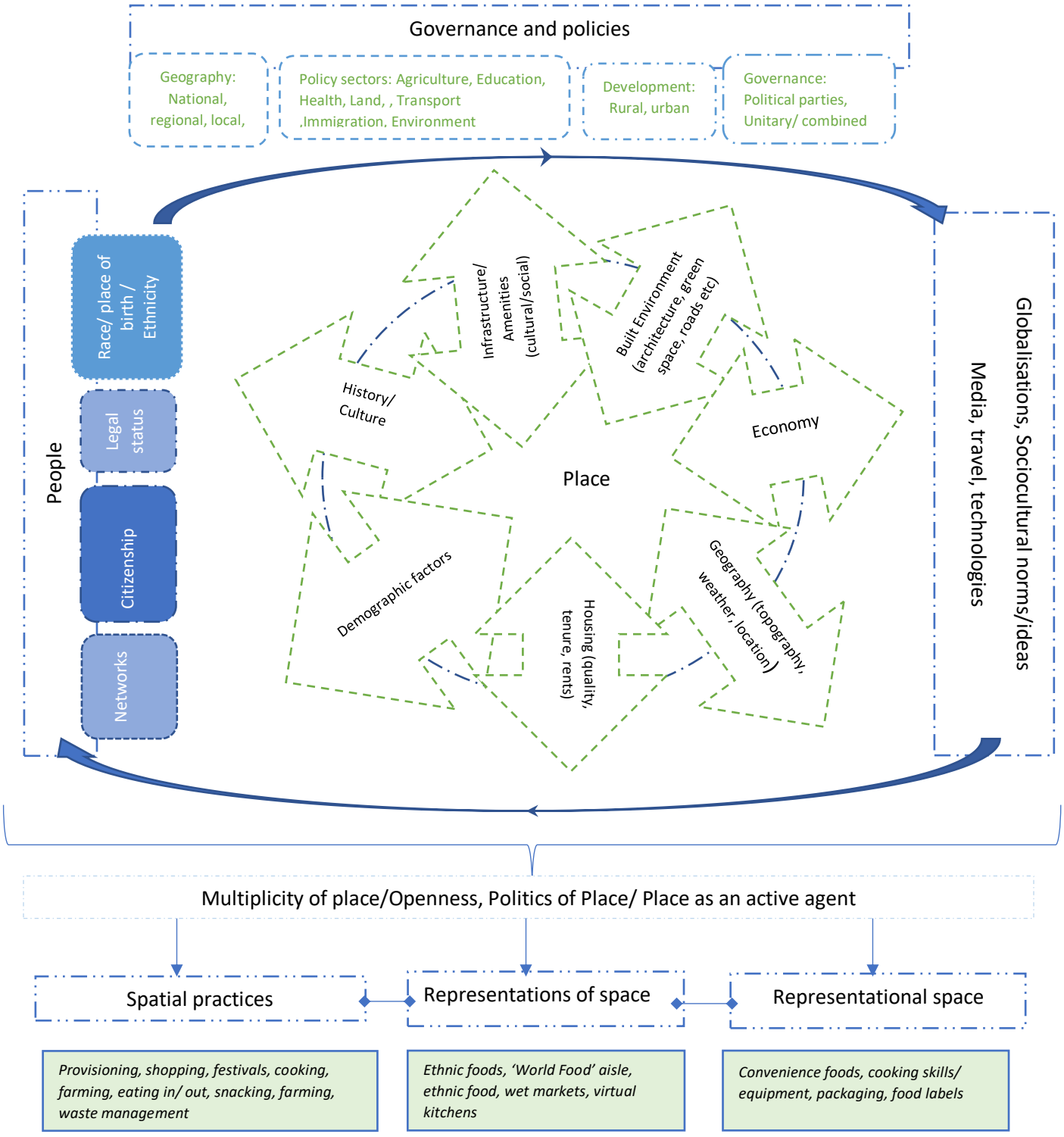
In this framework, the 'people' component highlights migrant characteristics. In particular, it outlines features that determine the rights and privileges of individuals/communities including access to resources in (food) places (such as the size of migrant community, length of stay, refugee status), complicated by the diversity of migrant epochs and associated governance, ideas (including attitudes to migration), termed 'superdiversity' by Vertotec (2007). This complex migrant terrain is extended by the term 'hyperdiversity' that describes the emergent identities, which evade 'ethnic', 'racial' or other pre-determined boundaries (Zhou & Di Rago, 2023). The 'people' component also includes hosts, who like migrants will have various definitions and trajectories of experience in place.

The flow of ideas (in right-hand bar) also interacts with sub-components of place, governance structures and people through practices. In the interaction with people, this may refer to cultural or religious restrictions on foods (food taboos, festivals etc) that generate practices, which shape places, such as the types of markets, the quality and presentation of foods (labels etc.). In reverse, places could also shape the types of people who reside there, influenced by the type of housing, topographical, other geographical or architectural features.

Government policies, structures and infrastructures (top-bar) include a range of sectors that impact on migration and the food system and determine the flows of people and ideas. Government policies are also influenced by 'people' and ideas/norms/values (double-ended arrows) through interactions which shape place.

Through the conceptual framework, I propose that the interactions in food places, mediated by the sub-components of place (transport, demography, geography, architecture), can be understood through the complexity of Massey's (1994, 2005) concepts (the activity, multiplicity/openness, and politics of place) and Lefebvre's (1991) interactive triad expressed in (green bars) spatial practices, representations of space and spatial representations. Hence the same (food) place, could have various practices, meanings attached and attributed to it determined by the various social interactions within it.

Figure 1. Conceptual Framework



Source: Authors own

2.4 Migration and the food system

Migration plays a pivotal role in the food system, as both a precursor and an outcome of transformations, through the diverse flows - of people, food, ideas, capital - (Avieli, 2019; Castles, 2010; Wilson, 2006) and (re)negotiation of local spaces (Phillips & Robinson, 2015). Food consumption, as a practice of daily life, provides a medium for re(creating) identity, social and class distinctions; defining individual and group inclusions and or exclusions in place (Abbots, 2017; Carrus et al., 2018; Magliocco,1998; Warde, 1997). Consumption has been transformed through globalisation, particularly the increased movement of people and ideas through travel, technology and the media (National Research Council, 2003).

Migration has introduced new and 'exotic' tastes, experiences, industries (Lasalle et al., 2020; OECD, 2012) and practices (Bessiere & Tibere, 2013; Jackson, 2002; Kershen, 2002; Panayi, 2008; Warde, 1997); allowed the adaptation, adoption and even the appropriation of foods (such as the 'British curry' - Narayan, 1995; Panayi, 2008 or the 'German kebab' – Liu et al, 2018) and the characterisation of places i.e., food as a tool for discovering local places (Bessiere & Tibere, 2013); places whose social and food environments are transformed by internal (Zukin, 2008, 2012) and international movements (Bessiere & Tibere, 2013).

Migration, in tandem with other social, economic and cultural changes, has shaped experiences including experiences of inequality (Castles & Miller, 2003; Çağlar & Schiller, 2018; McLafferty & Chakabarti, 2009); framed in time (including historical) and place (Kreiger, 2009). For example, the industrial revolution and revised land laws dislocated rural livelihoods and practices, such as subsistence farming, which forced peasant farmers from rural Britain to urban industries as 'poor', labourers (Iosifides, 2011)

More recently globalisation has influenced the context and composition of local areas and food systems. Furthermore, food insecurity has resurfaced as a major food and public health policy concern. The relationship between local place, food systems and food security are all priorities that would benefit from evidence informed decision-making (Carter et al., 2014; Tefft et al., 2017).

2.4.1 Migration Definitions and Boundaries

This study of migration adapts the complex, interdisciplinary concept of flows that comprises people, objects and ideas (Cresswell, 2010) and transforms embedded - physical, virtual, electronic and imagined - social connections (Sheller & Urry, 2016) from place to place (Portes, 2010) and in-

between places (Schependonk, 2012). Migration, as flow, is intrinsically linked to place, which (simultaneously) maps the dynamic network of geographical, social, economic, cultural and political interactions at different micro, meso and macro levels within it (Portes, 2010). An exploration of migration, could expose the diverse, unequal and food insecure (in)visible routes, representations and practices (Cresswell, 2010) that converge in place.

Public health studies of migration have focused on the movement of people, particularly the health outcomes of immigrants linked to use of the health system (Matlin et al., 2018 provide a good review) and patterns of dietary acculturation (Holdsworth et al., 2017; Satia-Abouta, 2002; Osei-Kwasi et al., 2019).

The remaining section will focus on the definitions associated with the migration of people, a key component of transformation in place.

Many economic, political, environmental, social and conflict-related factors drive migration (Zimmerman et al., 2011). Migration encompasses a wide range of terms that vary with the context. These contexts may be temporal and include the reason for and conditions of movement, rights associated with legal status and boundaries crossed (Anderson & Blinder, 2017; Urquia & Gagnon, 2011).

The United Nations (UN) definition distinguishes temporary or short-term (3-12 months) from long-term (12 months or longer) migration. However, the International Organisation for Migration (IOM) excludes time restrictions and comprises both internal and international movements across borders, away from the usual place of residence without regard for the reason, cause or volition of movement (IOM, 2022). In the UK, international immigrants comprise foreign-born nationals who have the right of abode and obtain permission to enter and those who have not needed permission to enter, such as EU nationals (Anderson & Blinder, 2017); noting new visa-entry arrangements following Brexit (UK Government, 2023). Refugees, due to the involuntary nature of their movement and protection under international law, are distinct from illegal immigrants (UNHCR, 2019). Migrants are broadly described by immigration classes designated: economic, study, family reunification or asylum (Kone et al., 2019).

There are limited measures and data sources that adequately reflect the contexts of migration and hence few quantitative studies of immigrants. The data sources capture different components that describe the migrant such as nationality, country of birth, length of stay in UK and immigration status (Jayaweera, 2014). A combination of measures can be used to provide a nuanced definition.

For example, to explain health and socialisation outcomes, Jayaweera (2014) and Waite and Cook (2011) identified six broad groupings of migrants based on birth cohort and time effects using a linkage of Census 2001 data to the Health Survey for England. This broad grouping comprised the "UK-born" or "second-generation migrant (born to immigrant parents or migrated before primary school age)", "child migrant or termed the 1.5 generation (who migrated before teenage and are socialised into the host youth culture)", the "adult migrant resident in the UK for less than five years", "adult migrant resident in UK for 5-9 years", "adult migrant resident in UK for 10-19 years" and "adult migrant resident in the UK for 20 years or longer". Nevertheless, the proposed groupings do not capture the totality of contexts or identities that define individual experiences such as transnationalism (movement between and dual belonging to places), 'serial' migration (multiple movements and belongings in place) – Wee & Yeoh (2021), lifestyle migration (Benson & O'Reilly, 2016) or self-described cultural identities, which may differ from ascribed identities (Antonsich, 2022; Kipnis et al, 2019).

2.4.2 Immigrants in the UK

All migrants have a common experience of moving but diverse trajectories (Gushulack et al., 2011). In 2021, there were an estimated 9.6 million foreign-born immigrants in the UK (ONS 2021), an annual net migration of 526,000 persons from 223 different countries; (IOM, 2023), which comprised 16% of the total population; refugees and asylum seekers made up 4% of the immigrant population (IOM, 2023). Urban areas, such as London, remained the most popular destination for non-EU migrants which included over half of the refugee or asylum seeker population (Kone et al., 2019). In contrast, more than 50% of the foreign-born residents outside London, were EU migrants (Kone et al., 2019).

Migrants have settled in spatial clusters, around shared values of religion, culture and language. This trend continued in the twentieth century following the second world war with migration from the new Commonwealth countries to urban locations characterised by poverty and relatively cheaper housing. Geographical clusters of immigrants offer visibility, a sense of shared class identity (particularly of co-ethnics), and security from discrimination and harassment (Robinson & Reeve, 2006; Wessendorf, 2019). These 'enclaves', which attract migrants from a wide variety of backgrounds living in relative poverty, also provide access to 'culturally sensitive' resources including religious, retail or recreational institutions, local employment and negotiating 'power'

within the host communities that ensures a 'reasonable quality of life' (Humphris, 2018; Papadopolous et al., 2004).

Migrants have been observed to have better health than their host populations, termed the 'healthy migrant effect' (Kearns et al., 2017). The healthy migrant effect has been attributed to the resilience required to migrate (Rechel, 2013), the maintenance of health-promoting lifestyle/behaviours such as lower rates of smoking and alcohol abuse (Andreeva & Unger, 2014; Zimmermann et al., 2011) and the lower potential for racial discrimination (Bécares et al., 2012) in places where migrant communities are relatively well established.

A systematic review of 57 studies, mainly from the United States (six UK studies), found positive health effects amongst migrants residing in areas of high own-ethnic density such as lower odds of limiting long-standing illness or poorer self-rated health, lower risk of pre-term birth and risky health behaviours, even after adjustment for other factors. In contrast, migration has been associated with relatively higher risks of certain infectious diseases such as tuberculosis, HIV or ethnic-specific genetically inherited diseases (Zimmermann et al., 2011). Furthermore, social inequalities which constrain individual choices - before, during and after migration – could undermine acculturation experiences that lead to relatively poorer health outcomes over time (Castaneda et al., 2015), particularly for refugees and asylum seekers who have limited rights (Brannen & O'Connell, 2022; Giuntella et al., 2018; Phillimore, 2011; Zimmerman et al., 2011).

Migrant settlement and dispersal patterns in the UK have become more complicated compared to the labour migration from Commonwealth countries in the 20th Century. Multiple policies for different countries under a range of government schemes have resulted in more dispersed migrant settlements (extending to the rural areas), which Vertovec (2007) has described as 'super-diversity'. This complex phenomenon, driven in part by government policy on resettlement regimes and regional and international agreements, is characterised by migrant profiles with multiple, intersecting demographic, socio-cultural and economic layers including the country of origin, ethnicity, age, gender, legal status. As a concept, super-diversity highlights the limitations of 'ethno-national' assumptions (of homogenous ethnic categories), the problematization of difference (or Otherness) and the understated gaps in systems, structures and processes that contribute to poor migrant health outcomes which have dominated public health research (Phillimore et al., 2018; Szabo, 2022). While it draws attention to the 'different dimensions of difference' (Aptekar, 2020), this phenomenon ascribed to the Global North has also been described as an inadequate explanation for the everyday experiences of injustice (Aptekar, 2017; Foner et al.,

2017) and the hybrid identities that emerge from the mixing of multiple identities and contexts (i.e., multiple diversities termed 'hyper-diversity' (Dean et al., 2018; Tasan-Kok et al., 2013). By locating individuals across the intersection of varied spatial, socio-economic and cultural loci, superdiversity calls for greater reflexivity in the social categories used for population health research (Phillimore, et al., 2018) and for policies that match social realities i.e., how people understand differences and experience space (Biehl, 2015; López-Peláez et al., 2022).

2.4.3 Migrants in the local UK Food System

Migration, which describes the movement of people from their habitual place of residence, has long been a feature of the UK food system from fork through to plate. The rich history of migrant interdependencies, which has included food processors, retailers, caterers and brewers, continues to expand (Kershen, 2002; Panayi, 2008). Immigrant workers comprise about 40% of the workforce in agriculture, retail and the food services (Davies, 2019). Evidence of these flows is seen in the United Kingdom's (UK) agricultural, retail and consumer sectors which account for 13% of all employment (DEFRA, 2022). Migrants feature in the UK seasonal agricultural sector (Kershen, 2002; Scott, 2016) and make up about a third of the workforce (31%) in the food sector (Rienzo & Reino, 2022), backed directly and indirectly by policies that maximise capital from relatively cheap labour (Lever & Milbourne, 2017; Milbourne & Coulson, 2021; Scott; 2013). Furthermore, the continual growth of food imports which account for 46% of the UK's trade and an ethnic food market worth £9.6 billion (in 2020; projected to rise by 61% in 2025 - Mintel, 2021) contribute to changing tastes (Panayi, 2008) and food practices (Warde et al., 2007); driven by population diversity, social class distinctions (Warde et al., 2019) and travel (Jackson, 2016) - itself a form of (short term) migration.

Seasonal agricultural migrations to augment family labour have given rise to coordinated movements via agencies, backed by agricultural and migrant policies with concordant shifts from labour-intensive to capital-intensive systems (Kershen, 2002; Scott, 2013). Migrants also play an integral role in the gig economy through digital food platforms, such as Uber eats and Deliveroo, an emergent feature of urban spaces (Altenried, 2021). Beyond the gig economy, migrant labour in the UK plays a vital role in ensuring a competitive consumer market, increasingly driven by food retailers that have intensified and diversified the processes of production across global sites (Arce & Marsden, 1993; Roglay, 2008), underpinned by government policies (Kirwan et al., 2006).

Furthermore, the UK remains a significant market for 'ethnic foods' with estimates of £5.7 billion and £6.7 billion (Mintel, 2019) for the 'eat in' and takeaways respectively. The spread of new foods through recipe books, 'haute cuisine' or cheaper convenience foods to meet the needs of different social classes and migrant populations have gradually expanded (Panayi, 2008). The food industry has provided migrants with participation in the labour market, social mobility and created niche markets with underlying formal and informal systems to meet religious, cultural and food safety requirements (Kershen, 2002).

The high propensity of migrants in the UK food sector reflects (in part) the low level of skill required, the precarious nature of work (Altenried, 2021), restrictions to the mainstream labour market (due in part to racial discrimination), opportunities for migrant entrepreneurship created by the demands of the migrant population (Hall, 2017) and changing tastes of the host population (Warde,1997).

These interconnections between people and place is manifest in practices characterised by overlapping contexts (i.e. the physical and social environment), compositions (socio-economic/legal status, size, ethnic characteristics) and collectives (historical, socio-cultural, sense of place) (Phillips & Robinson, 2015). In the UK, these interconnections have been explored in studies of individual or group migrant acculturation (Bacong & Menjivar, 2021), the design and development of migrant economies and maintenance of food practices (Kershens, 2002; Leung & Takeuchi, 2011; Abbots, 2017).

2.5 Uneven places, policies and practices

There is increasing research to demonstrate that place matters for experiences and practices i.e. that migrant integration may take on various trajectories in different places. The place-based approach has gained increasing recognition in disciplines such as geography, agricultural economics, health and food policy. It provides a nuanced lens for studying local experiences in relation to hegemonic interactions and structures, resulting processes and outcomes at micro, meso and macro scales (Lever et al, 2019; Losch & May, 2023; Sonnino & Marsden, 2022) that Hinrichs refers to as the 'roots' and 'routes' of place (Hinrichs, 2016: 761). The approach highlights the 'reality of spatial dynamics' (Losch & May, 2023: 322) and articulates the multidimensional and diverse - tangible and intangible - components that characterise food systems. This articulation can

support better governance of the food system by providing information on the opportunities and risks posed by adaptive changes (Feindt & Weiland, 2018; Losch & May,2023).

Much research has explored migrant settlement outcomes and practices, but relatively little research has examined how the features of place shape these outcomes (Szabo 2022; Ward & Geereart, 2016). The nutritional transition of migrants shown to vary by generational status (Osei-Kwasi, 2019) and the intersectionality of contexts before, during and after migration (Bacong & Menjivar, 2021; Fox et al., 2017) has been associated with greater consumption of foods high in sugar, salts and fats (Satia-Abouta, 2002; Alidu et al., 2018) particularly for those with fewer rights, resources or opportunities. A recent review of the food environment interactions of low- and middle-income immigrants to high-income countries by Bergenn-Clausen et al. (2021), outlined associated structural, environmental, and social changes that impacted food access and consumption patterns. The findings showed that the experiences of migrants from more traditional to modern food systems were shaped by individual socio-economic status and the compositional and contextual features of place including the food prices, knowledge of food sources, variety, availability and access to ethnic products. Similarly, the distinct experiences of two refugee cohorts of the same ethnicity, in different UK Gateway cities were shaped by the physical, material and social features of place such as available housing, the labour market, schools and other amenities, host prejudice and ethnic density (Platts-Flower & Robinson, 2015).

Robinson's, geographical review of 'new migration' in the UK (2010) noted economic regeneration and improved structure of provision particularly in more deprived post-industrial neighbourhoods with evidence of 'marketer' (Penaloza & Gilly, 1999; Pecoud, 2002) and consumer adaptation (Jamal, 1996; Kershen, 2002; Panayi, 2020; Pecoud, 2002). Moreover, the movement of goods, particularly high value foods such as fruits and vegetables, shape and are shaped by a range of national and international actors with active interests. The commodification of these goods, which transform the political, economic and cultural value of foods in both receiver and sender destinations (Jackson, 1999), has the potential to create patterns of inequality that extends borders across the food system. This migration (of goods) also results in the transformation of places, aptly illustrated by the nuances of banana trade for the UK (Arce & Marsden, 1993) and Mintz's seminal study of sugar (1985). This impact of migration is particularly pertinent to the UK, where food trade makes up almost half of the food provision, through processes that dislocate the process of production from consumption, overseen by a few (powerful) retailers that control over 65% of the commodity market (Arce & Marsden, 1993).

The experience of place is not unidirectional. Several studies of migrants have demonstrated the impact of dietary transition, highlighting contexts that determine varying trajectories. However, few studies have explored patterns of dietary transition in host populations (Andreeva & Unger, 2014) although there is evidence of the nutritional transition in whole populations linked to advancements in agricultural, socio-economic, trade demographic, and technological factors, which also contribute to health inequalities (Dixon et al., 2007; Masters et al., 2016).

Most studies of migrant consumption have focused on differences, experiences and practices of specific ethnic groups i.e., ethnicity, migrant status, religion. However, there have been several criticisms of this approach that assumes a 'homogenous' group with static cultural characteristics, ignores the multiplicity of cultural identities, the social construction of 'othering' and the dynamic boundaries individuals negotiate daily (Andreeva & Unger, 2014; Kipnis et al., 2014; Glick-Schiller & Çağlar, 2009, 2013; Wimmer 2007). Furthermore, simplified categories based on (assumed) shared cultural values may obscure complex inter-twined structural and institutional factors, which better explain the 'causes of causes' (Szabo, 2022). Other potential units of analyses which reflect lived social realities have been explored including the use of subjective boundaries such as place (Fox et al., 2017; Wimmer, 2004; Wimmer, 2007).

Moreover, there is research on patterns of internal migration termed 'gentrification' (Davidson & Lees, 2010; de Oliver, 2016; Lagadic, 2019; Zukin, 2010) which reshape markets in deprived and diverse communities. These movements generate (new) forms of commodification (de Oliver, 2016; Jackson, 2002) sustained by virtual spaces such as online reviews (Zukin et al., 2017), which expand the social interactions in place. These migrant flows, not often characterised by ethnic or racial distinctions, (re)produce new patterns of difference and disjuncture in place (Davidson & Lees, 2010; Zukin et al., 2017).

The importance of engaging with the complex lived realities of people in place as a route to addressing inequalities has been emphasised in food policy. Several scholars have advocated a richer understanding of place, that embraces the complexity of the multidisciplinary spheres, maps the dynamic and subjective interactions which express needs, identifies the structures that support, constrain or create health and articulates the lived experiences of those with unequal outcomes (Castellani et al., 2015; Ellaway & Macintyre, 2003; Gatrell et al., 2004; MacKain et al., 2003; Pettygrove & Ghose, 2016; Popay et al., 1998; Tunstall, 2005). An understanding that translates into coherent UK food policy (Parsons, 2019), which integrates the diversity of perspectives across environment, agriculture, land use in rural and urban settings, cultural identity, market economies

and politics, to generate an equitable food-secure system (Sonnino et al., 2016; Dixon et al., 2007) and an 'ecological public health' (Lang et al., 2009).

The UK food system, which depends on the movement of people, food and power through extensive trade networks (Lang et al., 2009), has produced an uneven nutritional transition (Hawkes, 2006) underpinned by government policy across a range of sectors (Parsons et al., 2020). The government policy of 'resilience' is also framed by place through a global lens that operates in the open market, sustainable intensification, agricultural industry and risk management (Kirwan & Maye, 2013; DEFRA, 2022) in a shift from food policy of national 'self-reliance'. This policy was reiterated in its recent response to the National Food Strategy (2021), chaired by Dimbleby, set within the context of rising costs, consumer sovereignty and economic policies (in relation to the agricultural and food industries). The response deferred proposals for complex multiple-level, system-wide measures and addressed a range of macro-level structures that defended proposals for more consumer information, greater industry contribution, regulatory standards and economic productivity (DEFRA, 2022); measures shown to have minimal impact in addressing issues of public health significance (Dowler, 2008; Lang et al., 2009; Mozaffarian et al., 2018). Moreover, as observed recently, policy can be fragmented, contradictory even (Parsons, 2020); a coherence of purpose will require inter-connections across policy sectors, which address issues of social justice (Colas & Edwards, 2022; Sonnino et al., 2016; Kirwan & Maye, 2013) and reflect local needs (Kirwan & Maye, 2013) in everyday places.

Place also features in public health research, which have mapped out the spatial contexts of the food environment particularly food retail places with equivocal results (Caspi et al., 2012; Lytle & Sokol, 2017). The studies, which are mainly cross-sectional, comprise a wide variation of study designs, definitions and measures of exposure/outcome, retail spaces such as supermarkets, fast-food and take-aways (Caspi et al., 2012; Lytle & Sokol, 2017; Lake, 2018). These spatial studies may underestimate food sources such as the traditional 'open' markets, local corner shops and other features of the virtual food environment including online food outlets (Keeble et al., 2023) and dark kitchens (Rinaldi et al., 2022), characteristic of many urban areas. Furthermore, there is little information on the relational contexts that inform food choice, including the underlying power dynamics (Park & Pellow, 2011) or the cultural factors that define the 'sense of place', (Caspi et al., 2012; Popay et al., 1998). These place-shaped contexts determine access to and distribution of resources that underlie (unequal) variations in food experiences.

2.6 The Food System

The food system describes the totality of food-related interactions between actors, sectors and values, which contribute to food security, human development and economic growth (Pingali & Abraham, 2022). The food system is broad, complex, adaptive and multidimensional; made up of several human and non-human interactions, processes and sub-systems and outcomes (Leeuwis et al. 2021; Sonnino & Milbourne, 2022). It is the sum total of the several interconnected activities that occur between agricultural production and waste management (including input, supply, production, harvest, transport, storage, processing, retail, distribution, consumption, disposal) and several actors across different sectors, interests and levels of governance (such as scientists, farmers, farm workers, traders, processors, service providers and consumers) with diverse and sometimes competing values, interests, goals and processes (Fan, 2021; Neff & Lawrence, 2014; Popkin & Reardon, 2018; Pingali & Abraham, 2022; Sonnino & Marsden, 2022).

These interactive elements of the food system are simultaneously both catalysts and products in the transformation of place. Food system transformation occurs in tandem with changes in other systems that occur at different levels – technological and knowledge-based systems, urban-rural systems (including migration), economic systems (Castles & Miller, 2003; Leeuwis et al., 2021; Popkin & Reardon, 2018). Pingali & Abrahams' (2022) economic history of food systems describe the Asian 'green revolution' of the 1960s that eradicated famines through the concentration of agricultural production on high-yielding varieties (of rice, wheat and maize). The productivity observed in the Asian countries studied occurred in tandem with industrialisation, which led to an expansion in the scales of production, transfer of resources (people, technologies, land, skills) and trade that resulted in different patterns of migration, income growth, markets and consumer demand; underpinned by national and international policies. People, ideas and resources moved as small-scale subsistence agricultural production of staple foods gave way to mass production of cash crops, which led to better incomes and enabled access to new products and consumer habits. Similar accounts have been reported across different economies (Colozza & Avendano, 2019; Dewey, 1989; Dixon, 2009; Reardon et al., 2009). These rapid agricultural developments also had negative, albeit unintended consequences, that limited the resilience of local resources (land, knowledge biodiversity), increased household food insecurity (Dixon et al., 2011) and risk of disease (Olivier et al., 2018).

The transformations emergent in food systems can be typified by traditional, modern and mixed food systems.

2.6.1 Traditional food systems: Traditional food systems are characterised by the self-sufficiency of small holders who produce (and process) 'fresh' or seasonal non-standardised food, often by direct labour and indigenous knowledge embedded in place (Popkin & Reardon, 2018). These traditional systems, which are synonymous with the indigenous peoples integrate (historical and) cultural contexts that function as a template for individual and collective identity. This system includes all types of culturally acceptable definitions of food by cottage industries from locally sourced natural resources, processed using indigenous knowledge and distributed/consumed through informal networks (Cadilhon et al., 2006; Kuhnlein & Chan 2000; Roche et al., 2007). Traditional food systems are considered essential to high quality diets maintained by the consumer's intimate knowledge of land and food resources (including medicinal and edible products); cultural/spiritual values and direct interactions between actors in food procurement, processing, storage and consumption, passed from generation to generation (Lang & Barling, 2012). Some of the features of traditional systems are evident in modern food systems such as the development of urban farmers markets (Tefft et al., 2017).

2.6.2 Modern Food systems: Unlike the traditional system, consumers in modern food systems are dislocated from the process of production that is segmented into several logistical systems, which re(define) value and delegate procurement, quality, safety, hygiene and distribution. This system, characteristic of urban systems (Dixon et al., 2007), is linked to globalised markets, liberal policies, foreign investment and extensive systems of communication that ensure 'just in time' delivery for a range of speciality products, available all year round (Amilien & Hegnes, 2013; Popkin & Reardon, 2018; Tefft et al., 2017). The modern market provides standard products, which meet pre-specified quality criteria designed to maximise economic efficiency, target consumer needs and values (i.e. convenience, price and quality and values 'safety', 'health', 'sustainable consumption', 'social justice' and 'non-GMO') through a range of outlets and innovative marketing system features such as self-service, optional cash transactions and e-commerce (Cadilhon et al., 2006; Tefft et al., 2017; Popkin & Reardon, 2018).

2.6.3 Mixed food systems are characterised by a variety of goods, processes and spaces – both formal and informal. Unlike the traditional food systems, where the patterns of production and consumption are somewhat 'organic', there is some organisation in mixed systems which is moderated by the consumers purchasing power particularly for meals produced outside the home. It incorporates 'traditional features' such as fresh goods and wet markets, a diversity of food outlets that are not part of a national or multinational chain, food vendors, processing, packaging and

access mechanisms including subsidies, safety nets – food transfers, credit, community kitchens and food banks – and supermarkets (HLPE, 2016; Tefft et al., 2017).

Changes from the traditional to the modern food system, also described as the nutrition transition, are associated with economic, political, technological and structural developments that result in lower food costs, greater availability of convenience/highly processed foods increased consumption of fast foods, highly processed foods (Popkin & Reardon, 2018; Sonnino & Marsden, 2006), malnutrition and diet related diseases (Branca et al., 2019; Scarborough et al., 2016). Indeed, Popkin & Reardon (2018) identified five 'meta-conditions' for food system transitions including income growth, favourable policies on privatisation, economic liberalisation, infrastructure, development of rural non-farm economies and modern technology, which are features of cities/urban areas.

These changes, which interact in a complex system, are dependent on the context and patterns of interaction that penetrate geographical boundaries (Arce & Marsden, 1993), can reduce sustainable production and equitable access to good quality food (Dowler et al., 2011; Ingram et al., 2013; Mozaffarian et al., 2018). While acknowledging the 'differentials' in the trajectories, Dixon et al. (2007) suggest that the nutritional transition converges urban diets (Hawkes, 2006), which generate inequalities in the access, affordability and availability of nutrient-dense foods. Typical features of this convergence include increased out-of-home and eating occasions (i.e., snacking), greater consumption of refined carbohydrates/sugars and lower consumption of legumes, fruits and vegetables and other whole grains (Popkin & Reardon, 2008; Popkin, 2017).

These linked transformations - nutritional, economic, social and cultural – are heterogenous in place conditioned by various socio-demographic, economic and cultural patterns that diversify the food system (Popkin & Reardon, 2008; Popkin, 2017). Diversity, is generated from the interaction between and within networks of actors and institutions and processes each with defined and latent purposes, priorities and processes resulting in differential outcomes, even when using the same resources (Leeuwin et al., 2021). Ensuring continued diversity of the food system can reduce the 'dominance' of actors and improve its resilience (Gaitán-Cremaschi et al., 2019; Leeuwin et al., 2021; Sonnino & Marsden, 2022). Resilience of the system, is of particular importance to those who are vulnerable such as the urban poor, including disadvantaged migrants (Popkin & Reardon, 2008; Dixon et al., 2007; O'Connell at al., 2019).

2.7 Public Health Policy, Migration and Local Food Systems

The return of public health to local authorities and the Localism Act (2011) has created potential for better coordination of food system governance that integrates diversity and promotes equity (Lever et al., 2019; Neff and Lawrence, 2014). Thus, public health policy now requires a broader range of information, which captures socio-cultural values and behaviours of people in everyday settings, to identify cross-linkages across local service and produce evidence-informed policies (Carrus et al., 2018). Further research is required to identify gaps in the structure, strengths and weaknesses of local food systems, in response to priorities of actors (Tefft, et al., 2017; Waterlander et al., 2018), variations of context and associated health behaviours and outcomes (Ellaway & Macintryre, 2003). This is especially relevant to the UK's increasingly diverse contexts.

Migration influences the characteristics of 'place' (Carrus et al., 2018). It (re)constructs eating and dietary patterns through the transmission of knowledge, culture and meanings, which emplace food and diversifies food and food spaces (Carrus et al., 2018) and contributes to the development of local economies (Carrus et al., 2018; Galea et al., 2019). Most of the research to date has focused on the dietary acculturation of migrants (Andreeva & Unger, 2014; Herforth & Ahmed, 2015); noting the influence of wider government policies and local socio-economic and demographic contexts. However, little is known of the adaptation in the host population (Andreeva & Unger, 2014) and *how* changing populations impact the food environment and vice-versa.

The current discourse on sustainable food security has renewed calls to reframe public health strategies in local places (Blake et al., 2010; Sonnino et al., 2016). The meaning of 'local', however varies with the contexts and interactions, reflected in the everyday experiences of consumers, which do not necessarily promote sustainability nor are immune from inequitable outcomes (Born & Purcell, 2006, Kirwan & Maye, 2013). The contexts, which are socially constructed depend on the ethnic make-up, socio-economic status, dominance and, or roles played by actors - as shoppers, retailers, farmers or workers (Blake et al., 2010; Bowyer et al., 2009) – at different micro/meso/macro levels in the food system (Born & Purcell, 2006; Kirwan and Maye, 2013; Bambara et al., 2019) and subject to the prevailing power dynamics between scales. Understanding the way actors in the food system negotiate space in everyday settings could provide insights that could be used to develop effective programs and improve population health (Bowyer et al., 2009; Lever et al., 2022).

Government policy, focused on individual behaviour, has had minimal impact (Mozaffarian et al., 2018). Increasingly attention has been given to characterising the spatial features of the food environment, to regulate the contexts of consumption, an (assumed) by-product of the food system; although the causal mechanisms are yet to be elucidated (Lake, 2018). In the UK, early studies to explore the link between the food environment and health outcomes found no association (Cummins, et al., 2005; Cummins, et al., 2014; Ellaway et al., 2012; Macintyre et al., 2005) or a marginal impact (Wrigley et al., 2002); additional evidence from systematic reviews have been inconclusive (Caspi et al., 2012; Cobb et al., 2015; Diez Roux & Mair, 2010; Townsend, 2017; Townsend & Lake, 2016).

These equivocal findings may reflect differences in the methodology (mainly cross-sectional) and definitions used across studies (Bosco & Jossart-Marselli, 2018; Diez Roux & Mair, 2010) and, or other (unmeasured) underlying factors such as consumer preference, beliefs and experience of food retail outlets (Block & Subramanian, 2015; Clark et al., 2004; Hawkes, 2015; Park et al., 2011). For example, a systematic review of 30 studies (including seven UK-based studies) exploring food behaviours associated with the local food environment, identified several important determinants of food choice (Pitt et al., 2017), which were not captured in studies of the food environment comprising of environmental (e.g. media and community safety) inter personal, social and cultural factors (e.g. availability of cultural foods). Furthermore, the use of new geospatial tools (fairly popular in these studies) map unto absolute and static notions of space that navigate artificial boundaries and are devoid of context. Moreover, these 'maps' may not reflect lived realities nor acknowledge the active agency involved in (re)shaping places (Bosco & Jossart-Marselli, 2018).

Bosco and Jossart-Marselli (2018) draw particular attention to the current frame applied in public health research on food environments, which is worth noting. The current frame focuses on local structures or features of the built environment (shops, takeaways, parks) that can be directly regulated by local authorities through planning or licencing laws (i.e., what Lefebvre would describe as the representations of space). Exploring the relational aspects of these local food environments as social places, by addressing questions of who uses what, when, for what purposes and to what effect, could provide further information on the differential forms of mobility, provisioning strategies and hidden work associated with these spaces (Bosco & Jossart-Marselli, 2018; Lever et al., 2022). Exploring a place-based approach using Lefebvre's and Massey's concept could identify potential gaps, opportunities and levers which could be used to design more effective public health interventions.

In this chapter, I have introduced the relational concepts of Lefebvre (1991) and Massey (1994, 2005) in the re(production) of space and outlined how place is transformed by the migration of people, food and things. Migration introduces diversity of people (their histories, identities, ethnicities, race, memories, preferences and rights) and commodities, including food commodities which have values that can take on many forms ('global', 'local', 'hybrid', 'appropriated'), (re)created in various places (markets, 'ethnic' stores, 'world aisles in mainstream stores', virtual spaces).

The review has shown that the everyday interactions of people and commodities transforms places and produces a plurality that Massey (2005) refers to as the multiplicity of place. The transformation or (re)production of place(s) over time, is a function of place characteristics, including its physical and cultural assets (place as an active participant), and dependent on the context (in the time-space compression – Massey, 2005), which reflect the interaction of power dynamics across various sectors and levels (i.e., the politics of place – Massey, 2005). This also includes the way space is conceived by planners, architects, developers (representation of space), the way it is lived (spatial practices) and the perceptions or meanings associated with the space (representational space) as proposed by Lefebvre (1991). The power dynamics impact the conception, perception and lived experiences of places, which can contribute to inequalities.

In this study, I aimed to demonstrate how these concepts were reflected in everyday interactions between people and their local food places by exploring the impact of migration on local food places. In the following chapters, I outline the methods and findings in the mixed methods study comprising qualitative and quantitative components. The components were designed to explore social interactions in place (through the subjective account of various actors i.e., qualitative and an objective examination of household purchases as a spatial practice i.e., quantitative), to highlight contextual heterogeneity and hegemony; identify underlying patterns in the representations of space, representational spaces and spatial practices, and the potential for unequal outcomes.

2.8 References

Altenried, M. (2021). Mobile workers, contingent labour: Migration, the gig economy and the multiplication of labour. *Environment and Planning A: Economy and Space*, *0*(0). https://doi.org/10.1177/0308518X211054846

Amilien V. & Hegnes A., W. (2013). The dimensions of 'traditional food' in reflexive modernity: Norway as a case study. Journal of the Science of Food and Agricultre. 93 (14): 3455 - 3466

Anderson B and Blinder S (2017) Who counts as a migrant? Definitions and their consequences. The Migration Observatory Briefing Paper https://migrationobservatory.ox.ac.uk/resources/briefings/who-counts-as-a-migrant-definitions-and-their-consequences/ (accessed January 2019).

Andreeva, V. A., & Unger, J. B. (2014). Host society acculturation and health practices and outcomes in the United States: Public health policy and research implications worldwide. Journal of Public Health Policy, 35(3), 278–291. https://doi.org/10.1057/jphp.2014.9

Andreeva, V. A., & Unger, J. B. (2015). Determinants of Host Society Acculturation and Its Relationship with Health Behaviors and Outcomes: A New Research and Intervention Framework. Journal of Immigrant and Minority Health, 17(5), 1420–1426. https://doi.org/10.1007/s10903-014-0104-x

Aptekar, S. (2020). Superdiversity as a methodological lens: recentring power and inequality In. J., Willem, D., Vender, N., Foner and P., Kasinit (eds). *Super-Diversity in Everyday Life.* 53 – 70.

Arce, A., & Marsden, T. K (1993). The Social Construction of International Food: A New Research Agenda. Economic Geography. 69 (3): 293 – 311.

Bacong, A.M., Menjívar, C. (2021). Recasting the Immigrant Health Paradox Through Intersections of Legal Status and Race. *Journal of Immigrant and Minority Health* **23**, 1092–1104 (2021). https://doi.org/10.1007/s10903-021-01162-2

Bambara C., Smith, K.E. and Pearce, J., (2019). The politics of health and place. Social Science and Medicine. 232:36 - 42

Bandy, L., Adhikari, V., Jebb, S., & Rayner, M. (2019). The use of commercial food purchase data for public health nutrition research: A systematic review. PLoS ONE, 14(1), 1–19. https://doi.org/10.1371/journal.pone.0210192

Bécares, L., Stafford, M., Laurence, J., & Nazroo, J. (2011). Composition, concentration and deprivation: Exploring their association with social cohesion among different ethnic groups in the UK. *Urban Studies*, *48*(13), 2771–2787. https://doi.org/10.1177/0042098010391295

Bécares, L., Shaw, R., Nazroo, J., Stafford, M., Albor, C., Atkin, K., … Pickett, K. (2012). Ethnic density effects on physical morbidity, mortality, and health behaviors: A systematic review of the literature. American Journal of Public Health, 102(12), 33–66. https://doi.org/10.2105/AJPH.2012.300832

Benson M., & O'Reilly K., (2016). From lifestyle migration to a lifestyles in migration: categories, concepts and ways of thinking. *Migration Studies,* 4(1): 20 – 37

Bessiere & Thiere (2013).Traditional food and tourism: French tourist experience and food heritage in rural spaces. Journal of the Science of Food and Agriculture, 93 (14): 3420 - 3425

Bhatia, S., & Ram, A. (2009). Theorizing identity in transnational and diaspora cultures: A critical

approach to acculturation. International Journal of Intercultural Relations, 33(2), 140–149. https://doi.org/10.1016/j.ijintrel.2008.12.009

Biehl, K. S. (2015). Spatializing diversities, diversifying spaces: housing experiences and home space perceptions in a migrant hub of Istanbul. *Ethnic and Racial Studies*, *38*(4). 596-607 https://doi.org/10.1080/01419870.2015.980293

Blake, M. K., Mellor, J., & Crane, L. (2010). Buying local food: Shopping practices, place, and consumption networks in defining food as "local". *Annals of the Association of American Geographers*, *100*(2), 409-426.

Block, J. P., & Subramanian, S. V. (2015). Moving Beyond "Food Deserts": Reorienting United States Policies to Reduce Disparities in Diet Quality. PLOS Medicine. https://doi.org/10.1371/journal.pmed.1001914

Born, B., & Purcell, M. (2006). Avoiding the local trap: Scale and food systems in planning research. *Journal of Planning, Education and Research*, *26*(2), 195-207.

Bosco, F. J., & Joassart-Marcelli, P. (2018). Relational space and place and food environments: geographic insights for critical sustainability research. *Journal of Environmental Studies and Sciences*, *8*(4), 539-546. https://doi.org/10.1007/s13412-018-0482-9

Bourhis, R. Y., Montaruli, E., El-Geledi, S., Harvey, S. P., & Barrette, G. (2010). Acculturation in Multiple Host Community Settings. Journal of Social Issues, 66(4), 780–802. https://doi.org/10.1111/j.1540-4560.2010.01675.x

Bowyer, S., Caraher, M., Eilbert, K., & Carr-Hill, R. (2009). Shopping for food: Lessons from a London borough. *British Food Journal*. 111(5), 452-474 https://doi.org/10.1108/00070700910957294

Branca, F., Lartey, A., Oenema, S., Aguayo, V., Stordalen, G. A., Richardson, R., … Afshin, A. (2019). Transforming the food system to fight non-communicable diseases. *BMJ (Online)*, 364(January), 1–7. https://doi.org/10.1136/bmj.l296

Brannen, J., O'Connell, R. (2022). Experiences of food poverty among undocumented parents with children in three European countries: a multi-level research strategy. *Humanities and Social Science Communications* **9**, 42. https://doi.org/10.1057/s41599-022-01053-3 https://www.nature.com/articles/s41599-022-01053-3

Cappellini, B., Parsons, E., & Harman, V. (2016). 'Right Taste, Wrong Place': Local Food Cultures, (Dis)identification and the Formation of Classed Identity. Sociology, 50(6), 1089–1105. https://doi.org/10.1177/0038038515593033

Carrus, G., Pirchio, S., & Mastandrea, S. (2018). Social-cultural processes and urban affordances for healthy and sustainable food consumption. Frontiers in Psychology. https://doi.org/10.3389/fpsyg.2018.02407

Carter, M. A. N., Dubois, L., & Tremblay, M. S. (2014a). Place and food insecurity: a critical review and synthesis of the literature. Public Health Nutrition, 17(1), 94–112. https://doi.org/10.1017/S1368980013000633

Caspi, C. E., Sorensen, G., Subramanian, S. V., & Kawachi, I. (2012). The local food environment and diet: A systematic review. Health and Place, 18(5), 1172–1187. https://doi.org/10.1016/j.healthplace.2012.05.006

Castañeda, H., Holmes, S. M., Madrigal, D., Young, M.-E. D., Beyeler, N., & Quesada, J. (2015). Immigration as a Social Determinant of Health. Ssrn. https://doi.org/10.1146/annurev-publhealth-032013-182419

Castllani, B., Rajaman, R., Buckwater, J.G., Ball, M., & Hafferty, F. (2015). Place as a Complex System. Springer. Heidelberg, New York, Dordrecht, London.

Clarke, I., Hallsworth, A., Jackson, P., & Ronan de Kervenoael, P. (2004). Retail competition and consumer choice: Contextualising the " food deserts " debate. International Journal of Retail and Distribution Management. 32 (2/3), 89 – 99

Clout, H. (2007). Review: For Space. *Annales de Geographie. 655 (3), 329*

Rinaldi, C., D'aguilar, M., & Egan, M. (2022). Understanding the online environment for the delivery of food, alcohol and tobacco: an exploratory analysis of 'dark kitchens' and rapid grocery delivery services. *International journal of environmental research and public health*, *19*(9), 5523.

Cobb, L. K., Appel, L. J., Franco, M., Jones-Smith, J. C., Nur, A., & Anderson, C. A. M. (2015). The relationship of the local food environment with obesity: A systematic review of methods, study quality, and results. Obesity. https://doi.org/10.1002/oby.21118

Cohen, N., & Ilieva, R. T. (2015). Environmental Innovation and Societal Transitions Transitioning the food system: A strategic practice management approach for cities. Environmental Innovation and Societal Transitions, 17, 1–19. https://doi.org/10.1016/j.eist.2015.01.00

Colozza, D., & Avendano, M. (2019). Urbanisation, dietary change and traditional food practices in Indonesia: A longitudinal analysis. *Social Science & Medicine*, *233*, 103-112.

Cresswell, T. (2010). Towards a politics of mobility. *Environment and Planning D: Society and Space*, *28* (1), 17- 31 https://doi.org/10.1068/d11407

Crul, M. (2016). Super-diversity vs. assimilation: how complex diversity in majority–minority cities challenges the assumptions of assimilation. Journal of Ethnic and Migration Studies, 42(1), 54–68. https://doi.org/10.1080/1369183X.2015.1061425

Cummins, S., Flint, E., & Matthews, S. A. (2014). New neighbourhood grocery store increased awareness of food access. Health Affairs, 33(2), 283–291. https://doi.org/10.1377/hlthaff.2013.0512

Cummins, S., Petticrew, M., Higgins, C., Findlay, A., & Sparks, L. (2005). Large scale food retailing as an intervention for diet and health: Quasi-experimental evaluation of a natural experiment. Journal of Epidemiology and Community Health, 59(12), 1035–1040. https://doi.org/10.1136/jech.2004.029843

Davidson, M., & Lees, L. (2010). New-build gentrification: its histories, trajectories, and critical geographies. *Population, space and place*, *16*(5), 395-411.

Davies, J. (2018). From severe to routine labour exploitation: The case of migrant workers in the UK food industry. Criminology and Criminal Justice. https://doi.org/10.1177/1748895818762264

Dean, J., Regier, K., Patel, A., Wilson, K., & Ghassemi, E. (2018). Beyond the cosmopolis: Sustaining hyper-diversity in the suburbs of peel region, Ontario. *Urban Planning*, *3*(4). https://doi.org/10.17645/up.v3i4.1700

DEFRA (2022). Government Food Strategy. https://www.gov.uk/government/publications/government-food-strategy/government-food-strategy (accessed October 2023)

de Oliver, M. (2016). Gentrification as the appropriation of therapeutic 'diversity': A model and case study of the multicultural amenity of contemporary urban renewal. *Urban Studies*, *53*(6), 1299-1316.

Delormier, T., Frohlich, K. L., & Potvin, L. (2009). Food and eating as social practice - Understanding eating patterns as social phenomena and implications for public health. Sociology of Health and Illness. https://doi.org/10.1111/j.1467-9566.2008.01128.x

Dewey, K. G. (1989). Nutrition and the commoditation of food systems in Latin America and the Caribbean. *Social Science & Medicine*, *28*(5), 415-424.

Diez Roux, A., V. (2011). Complex Systems Thinking and Current Impasses in Health Disparities Research. *American Journal of Public Health*. https://doi.org/10.2105/ajph.2011.300149

Diez Roux, A., V. (2016). Neighbourhoods and Health: What Do We Know? What Should We Do? *American Journal of Public Health*, 106(3), 430–431. https://doi.org/10.2105/AJPH.2016.303064

Diez Roux, A V, & Mair, C. (2010). Neighbourhoods and health. Annals of the New York Academy of Sciences. https://doi.org/10.1093/ije/dyh387

Dowler, E. A., Kneafsey, M., Lambie, H., Inman, A., & Collier, R. (2011). Thinking about "food security": Engaging with UK consumers. Critical Public Health, 21(4), 403–416. https://doi.org/10.1080/09581596.2011.620945

Dixon J., Omwega A.M, Friel S., Burns C., Doneti K., & Carlisle R. (2007). The health equity dimensions of urban food systems. *Journal of Urban Health,* 84 (Suppl 1),118 - 129

Dixon, J. (2009). From the imperial to the empty calorie: how nutrition relations underpin food regime transitions. *Agriculture and Human Values*, *26*, 321-333.

Dixon, J. (2011). Diverse food economies, multivariant capitalism, and the community dynamic shaping contemporary food systems. *Community Development Journal*, *46*(suppl_1), i20-i35.

Ellaway, A., Macdonald, L., Lamb, K., Thornton, L., Day, P., & Pearce, J. (2012). Do obesity-promoting food environments cluster around socially disadvantaged schools in Glasgow, Scotland? Health & Place, 18(6), 1335–1340. https://doi.org/10.1016/j.healthplace.2012.06.001

Foner, N., Duyvendak, J. W., & Kasinitz, P. (2017). Introduction: super-diversity in everyday life. *Ethnic and Racial Studies*, *42*(1), 1–16. https://doi.org/10.1080/01419870.2017.1406969

Friel, S., Pescud, M., Malbon, E., Lee, A., Carter, R., Greenfield, J., Cobcroft, M. Potter, J., Rychetnik, L., Meertens, B. (2017). Using systems science to understand the determinants of inequities in healthy eating. PLoS ONE, 12(11), 1–18. https://doi.org/10.1371/journal.pone.0188872

Fuchs, C. (2019). Henri Lefebvre's theory of the production of space and the critical theory of communication. *Communication Theory*, *29*(2),129-150 https://doi.org/10.1093/ct/qty025

Garsetti, M., De Vries, J., Smith, M., Amosse, A., & Rolf-Pedersen, N. (2007). Nutrient profiling schemes: Overview and comparative analysis. European Journal of Nutrition, 46(SUPPL. 2), 15–28.

https://doi.org/10.1007/s00394-007-2002-7

Glick-Schiller, N., & Çağlar, A. (2013). Locating migrant pathways of economic emplacement: Thinking beyond the ethnic lens. *Ethnicities*, *13*(4), 494–514. https://doi.org/10.1177/1468796813483733

Global Panel on Agriculture and Food Systems for Nutrition 2016. (2016). Food Systems and Diets. Retrieved from http://glopan.org/sites/default/files/ForesightReport.pdf

Grzymala-Kazlowska, A., & Phillimore, J. (2018). Introduction: rethinking integration. New perspectives on adaptation and settlement in the era of super-diversity. Journal of Ethnic and Migration Studies. https://doi.org/10.1080/1369183X.2017.1341706

Gushulak, B. D., & MacPherson, D. W. (2011). Health Aspects of the Pre-Departure Phase of Migration. PLoS Medicine, 8(5), e1001035. https://doi.org/10.1371/journal.pmed.1001035

Hall, S., King, J., & Finlay, R. (2017). Migrant infrastructure: Transaction economies in Birmingham and Leicester, UK. Urban Studies. https://doi.org/10.1177/0042098016634586

Hall, S. M. (2015). Super-diverse street: a 'trans-ethnography' across migrant localities. Ethnic and Racial Studies, 38(1), 22–37. https://doi.org/10.1080/01419870.2013.858175

Hawkes, C., Smith, T. G., Jewell, J., Wardle, J., Hammond, R. A., Friel, S., Thow, A.M., Kain, J. (2015). Smart food policies for obesity prevention. The Lancet, 385(9985), 2410–2421. https://doi.org/10.1016/S0140-6736(14)61745-1

Herforth, A., & Ahmed, S. (2015). The food environment, its effects on dietary consumption, and potential for measurement within agriculture-nutrition interventions. *Food Security*, *7*(3), 505–520. https://doi.org/10.1007/s12571-015-0455-8

HLPE. 2017. Nutrition and food systems. A report by the High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.

Hinrichs, C. (2016). Fixing food with ideas of "local" and "place." *Journal of Environmental Studies and Sciences*, *6*(4). https://doi.org/10.1007/s13412-015-0266-4

Humphris, R. (2018). Mutating faces of the state? Austerity, migration and faith-based volunteers in a UK downscaled urban context. Sociological Review. https://doi.org/10.1177/0038026118793035

Ingram, J. S. I., Wright, H. L., Foster, L., Aldred, T., Barling, D., Benton, T. G., … Sutherland, W. J. (2013). Priority research questions for the UK food system. Food Security. https://doi.org/10.1007/s12571-013-0294-4

IOM UN Migration 2019. Who is a migrant? https://www.iom.int/who-is-a-migrant (accessed June, 2019).

IOM Migration Portal (2019). IOM Migration Portal Link: https://migrationdataportal.org/?i=stock_abs_&t=2017 (accessed May 2019)

Iosifides, T. (2011). *Qualitative Methods in Migration Studies: A Critical Realist Perspective*. Routledge, London.

Jamal, A. (1996). Acculturation: The symbolism of ethnic eating among contemporary British

consumers. British Food Journal, 98(10), 12–26. https://doi.org/10.1108/00070709610153786

Jamal, A. (1998). Food consumption among ethnic minorities: The case of British-Pakistanis in Bradford, UK. British Food Journal, 100 (5), 221–227.

Kearns, A., Whitley, E., Egan, M., Tabbner, C., & Tannahill, C. (2017). Healthy Migrants in an Unhealthy City? The Effects of Time on the Health of Migrants Living in Deprived Areas of Glasgow. Journal of International Migration and Integration, 18(3), 675–698. https://doi.org/10.1007/s12134-016-0497-6

Keeble, M., Adams, J., Burgoine, T. (2023). Changes in online food access during the COVID-19 pandemic and associations with deprivation: longitudinal analysis. *JMIR Public Health Surveill* 9, e41822 DOI: 10.2196/41822

Kershen, A., J. (2002). Introduction: Food in the migrant experience. In Food in the migrant experience. London. Ashgate

Kipnis, E., & Broderick, A. J. (2014). Consumer multiculturation: Consequences of multicultural identification for brand knowledge. *Consumption Markets & Culture*, 17(3), 231-253 https://dx.doi.org/10.1080/10253866.2013.778199

Kirwan, J., & Maye, D. (2013). Food security framings within the UK and the integration of local food systems. *Journal of Rural Studies*, *29*, 91-100. https://doi.org/10.1016/j.jrurstud.2012.03.002

Krieger, N. (2009). Putting health inequities on the map: social epidemiology meets medical/health geography—an ecosocial perspective. *GeoJournal*, *74*(2), 87–97. http://www.jstor.org/stable/41148316

Kone, Z., Ruiz, I. & Vargas-Silva, C. (2019). Refugees and the UK Labour market. *Econref Working paper 04- 2019*, Centre on Migration, Policy and Society. https://www.compas.ox.ac.uk/wp-content/uploads/ECONREF-Refugees-and-the-UK-Labour-Market-report.pdf

Kusenbach, Margarethe, T. (2003). Street Phenomenology: The Go-Along as Ethnographic Research Tool. *Ethnography*, *4*(3), 455–485. https://doi.org/10.1177/1466138103043007

Lagadic, M. (2019). Along the London overground: Transport improvements, gentrification, and symbolic ownership along London's trendiest line. *City & Community*, *18*(3), 1003-1027.

Lake, A. A. (2018). Neighbourhood food environments: Food choice, foodscapes and planning for health. *Proceedings of the Nutrition Society*, *77*(3). https://doi.org/10.1017/S0029665118000022

Lang, T., & Caraher, M. (1998). Access to Healthy Foods: Part II. Food Poverty and Shopping Deserts: What are the Implications for Health Promotion Policy and Practice? *Health Education Journal*, 32–38. https://doi.org/10.1177/001789699805700303

Lang, T., & Rayner, G. (2012). Ecological public health: the 21st century's big idea? An essay by Tim Lang and Geof Rayner. BMJ (Clinical research ed.), 345, e5466. https://doi.org/10.1136/bmj.e5466

Lefebvre, H. (1991). The Production of Space (translated by D. Nicholson-Smith). Malden: Blackwell Publishing

Lever, J., & Milbourne, P. (2017). The structural invisibility of outsiders: the role of migrant labour in the meat-processing industry. *Sociology*, *51*(2): 306 – 322. https://doi.org/10.1177/0038038515616354

Lever, J., Blake, M., Newton, D., & Downing, G. (2022). Working across boundaries in regional place-based food systems: Triggering transformation in a time of crisis. *Cities*, *130*. https://doi.org/10.1016/j.cities.2022.103842

Lopez-Class, M., Castro, F. G., & Ramirez, A. G. (2011). Conceptions of acculturation: A review and statement of critical issues. Social Science and Medicine. https://doi.org/10.1016/j.socscimed.2011.03.011

Losch, B., May, J. (2023). Place-Based Approaches to Food System Resilience: Emerging Trends and Lessons from South Africa. In: C., Béné, S., Devereux (eds) *Resilience and Food Security in a Food Systems Context. Palgrave Studies in Agricultural Economics and Food Policy*. Palgrave Macmillan, Cham., 321-353 https://doi.org/10.1007/978-3-031-23535-1_10

Loyer, J., & Knight, C. (2018). Selling the "Inca superfood": nutritional primitivism in superfoods books and maca marketing. Food, Culture and Society. https://doi.org/10.1080/15528014.2018.1480645

Luedicke, M. K. (2015). Indigenes' responses to immigrants' consumer acculturation: A relational configuration analysis. Journal of Consumer Research, 42(1), 109–129. https://doi.org/10.1093/jcr/ucv002

Lytle, L. A., & Sokol, R. L. (2017). Measures of the food environment: A systematic review of the field, 2007–2015. *Health and Place.* 44: 18 – 34. https://doi.org/10.1016/j.healthplace.2016.12.007

Macintyre, S., McKay, L., Cummins, S., & Burns, C. (2005). Out-of-home food outlets and area deprivation: Case study in Glasgow, UK. International Journal of Behavioral Nutrition and Physical Activity, 2, 1–7. https://doi.org/10.1186/1479-5868-2-16

Massey, D. (1994). Space, Place and Gender. Cambridge. Polity Press.

Massey, D., (1999). Massey, D. (1999). Philosophy and politics of spatiality: some considerations The Hettner Lecture in Human Geography. *Geographische Zeitschrift*, *87*(1), 1-12.

Massey, D., (2005). *For Space*. Sage. London, California, New Delhi.

McLafferty, S., Chakrabarti, R. Locating diversity: race, nativity and place in health disparities research. *GeoJournal* **74**, 107–113 (2009). https://doi.org/10.1007/s10708-009-9263-z

Mintel (2019). UK Ethnic Restaurants and Takeaways Market Report. https://store.mintel.com/uk-ethnic-restaurants-and-takeaways-market-report (accessed May, 2019).

Mintz, S. (1985). Sweetness and Power: The Place of Sugar in Modern History. Penguin Books. New York.

Mozaffarian, D., Angell, S. Y., Lang, T., & Rivera, J. A. (2018). Role of government policy in nutrition-barriers to and opportunities for healthier eating. BMJ (Online). https://doi.org/10.1136/bmj.k2426

Nazroo, J. Y. (2003). The structure of inequalities in health 0930277. 93(2), 277–284.

Neff, R.A. & Lawrence, S. (2014). 'Chapter 1: Food Systems', in R Neff (ed.), *Introduction to the US food system: public health, environment and equity',* John Wiley & Sons, Incorporated. San Francisco, p.5 -7

Osei-Kwasi, H. A., Powell, K., Nicolaou, M., & Holdsworth, M. (2017). The influence of migration on dietary practices of Ghanaians living in the United Kingdom: a qualitative study. Annals of Human Biology, 44(5), 454–463. https://doi.org/10.1080/03014460.2017.1333148

Onwuegbuzie, A.J., & Combs, J.P., (2010). Emergent data analysis techniques in mixed method research: a synthesis. In*: Mixed methods in Social and Behavioural Research* eds: A. Tashakkori, C.Teddlie. 2nd Edition. London.Sage.

Papadopoulos, I., Lees, S., Lay, M., & Gebrehiwot, A. (2004). Ethiopian Refugees in the UK: Migration, Adaptation and Settlement Experiences and their Relevance to Health*. Ethnicity and Health*, 9(1), 55–73. https://doi.org/10.1080/1355785042000202745

Park, L. S. H., & Pellow, D. N. (2011). The case of the missing mountain: Migration and the power of place. *Communities, neighbourhoods, and health: Expanding the boundaries of place*, 111-126.

Park, Y., Quinn, J., Florez, K., Jacobson, J., Neckerman, K., & Rundle, A. (2011). Hispanic immigrant women's perspective on healthy foods and the New York City retail food environment: A mixed-method study. *Social Science and Medicine*. https://doi.org/10.1016/j.socscimed.2011.04.012

Parsons, K. (2020). Who makes food policy in England? A map of government actors and activities. Food Research Collaboration. *Rethinking Food Governance Series.* https://foodresearch.org.uk/publications/who-makes-food-policy-in-england-map-government-actors/

Pecoud, A., (2002). '*Weltoffenheit schafft Jobs*': Turkish Entrepreneurship and Multiculturalism in Berlin. *International Journal of Urban and Regional Research.* 26(3), 494–507

Pemberton, S., & Phillimore, J. (2018). Migrant place-making in super-diverse neighbourhoods: Moving beyond ethno-national approaches. *Urban Studies*, 55(4), 733–750. https://doi.org/10.1177/0042098016656988

Peñaloza, L., (2007). Mainstreet USA revisited. *International Journal of Sociology and Social Policy*, *27*(5/6), 234-249.

Peñaloza, L., & Gilly, M. C. (1999). Marketer Acculturation: The Changer and the Changed. *Journal of Marketing*, *63*(3), 84–104. https://doi.org/10.2307/1251777

Pettygrove, M., & Ghose, R. (2016). Mapping Urban Geographies of Food and Dietary Health: A Synthesized Framework. *Geography Compass*, *10*(6), 262-281. https://doi.org/10.1111/gec3.12268

Phillimore, J. (2011). Refugees, acculturation strategies, stress and integration. Journal of Social Policy, 40(3), 575–593. https://doi.org/10.1017/S0047279410000929

Phillips, D., & Robinson, D. (2015). Re fl ections on Migration, Community, and Place. 420(May), 409–420.

Pingali, P., & Abraham, M. (2022). Food systems transformation in Asia–A brief economic

history. *Agricultural Economics*, *53*(6), 895-910.

Pitt, E., Gallegos, D., Comans, T., Cameron, C., & Thornton, L. (2017). Exploring the influence of local food environments on food behaviours: A systematic review of qualitative literature. Public Health Nutrition. https://doi.org/10.1017/S1368980017001069

Platts-Fowler, D., & Robinson, D. (2015). A place for integration: Refugee experiences in two English cities. *Population, Space and Place*, *21*(5), 476-491.

Popkin, B. M., & Reardon, T. (2018). Obesity and the food system transformation in Latin America. *Obesity Reviews*, *19*(8), 1028-1064.

Reardon, T., Barrett, C. B., Berdegué, J. A., & Swinnen, J. F. (2009). Agrifood industry transformation and small farmers in developing countries. *World development*, *37*(11), 1717-1727.

Rechel, B., Mladovsky, P., Ingleby, D., Mackenbach, J. P., & McKee, M. (2013). Migration and health in an increasingly diverse Europe. The Lancet, 381(9873), 1235–1245. https://doi.org/10.1016/S0140-6736(12)62086-8

Reino, M., & Rienzo, C. (2022). Migrants in the UK labour market: An overview. *Migration Observatory*, *6*.

Rutter, H., Savona, N., Glonti, K., Bibby, J., Cummins, S., Finegood, D.T., Greaves, F., Harper, L., Hawe, P., Moore, L., Petticrew, M., Rehfuess, E., Shiell, A., Thomas, J., White, M. (2017). The need for a complex systems model of evidence for public health. Lancet. 9;390(10112):2602-2604. doi: 10.1016/S0140-6736(17)31267-9.

Satia-Abouta, J., Patterson, R. E., Neuhouser, M. L., & Elder, J. (2002). Dietary acculturation: Applications to nutrition research and dietetics. Journal of the American Dietetic Association. https://doi.org/10.1016/S0002-8223(02)90247-6

Scarborough, P., Bhatnagar, P., Wickramasinghe, K. K., Allender, S., Foster, C., & Rayner, M. (2011). The economic burden of ill health due to diet, physical inactivity, smoking, alcohol and obesity in the UK: An update to 2006-07 NHS costs. Journal of Public Health. https://doi.org/10.1093/pubmed/fdr033

Schapendonk, J. (2012). Mobilities and Sediments: Spatial Dynamics in the Context of Contemporary Sub-Saharan African Migration to Europe. *African Diaspora*, *5*(2), 117-142. https://doi.org/10.1163/18725457-12341234

Scott S. (2013). Labour, migration and the spatial fix. Evidence from the UK food industries. Antipode, 45(5): 1090 – 1109

Sheller, M., & Urry, J. (2006). The New Mobilities Paradigm. Environment and Planning A: Economy and Space, 38(2), 207-226. https://doi.org/10.1068/a37268

Sheller, M. (2017). From spatial turn to mobilities turn. *Current Sociology*, *65*(4), 623-639. https://doi.org/10.1177/0011392117697463

Sonnino, R., Marsden, T., & Moragues-Faus, A. (2016). Relationalities and convergences in food security narratives: towards a place-based approach. *Transactions of the Institute of British Geographers*, *41*(4). 477-498 https://doi.org/10.1111/tran.12137

Sonnino, R., & Milbourne, P. (2022). Food system transformation: a progressive place-based approach. *Local Environment*, *27*(7). 915 – 926 https://doi.org/10.1080/13549839.2022.2084723

Solér, C., & Plazas, M. C. (2012). Integration of ethnic food into Swedish food rituals. The cultural fitness of tacos. Appetite, 58(3), 928–935. https://doi.org/10.1016/j.appet.2012.02.010

Szabo A. (2022). Addressing the causes of the causes: why we need to integrate social determinants into acculturation theory. *International Journal of Intercultural Relations*. 91: 318 - 322

Tasan-Kok, T., van Kempen, R., Raco, M., & Bolt, G. (2013). Towards Hyper-Diversified European Cities: A Critical Literature Review. In *Utrecht: Utrecht University, Faculty of Geosciences*.

Tashakkori, A., & Teddlie, C., (2010). Overview of Contemporary Issues in Mixed Methods Research. In: Mixed methods in Social and Behavioural Research eds: A. Tashakkori, C.Teddlie. 2nd Edition. London.Sage.

Tefft, James Floyd; Jonasova, Marketa; Adjao, Ramziath Teni Ola Abebi; Morgan, Anjali Maria. 2017. Food systems for an urbanizing world: knowledge product (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/454961511210702794/Food-systems-for-an-urbanizing-world-knowledge-product

Townshend, T., & Lake, A. (2016). Obesogenic environments: Current evidence of the built and food environments. *Perspectives in Public Health*, 137(1),38-44 https://doi.org/10.1177/1757913916679860

Tunstall, H., (2005). Book Review: Neighbourhoods and Health. Kawachi I and Berkman LF (eds). New York: Oxford University Press Inc. *International Journal of Epidemiology*. 34 (1):231–232

UNHCR 2019. UN Refugee Agency https://www.unhcr.org/uk/who-we-help.html (accessed July 2017)

Van Oudenhoven, J. P., Ward, C., & Masgoret, A. M. (2006). Patterns of relations between immigrants and host societies. International Journal of Intercultural Relations. 30, 637 -651 https://doi.org/10.1016/j.ijintrel.2006.09.001

Van Rijnsoever, F.J., van Lente, H., van Trijp, H.C.M. (2011) Systemic policies towards a healthier and more responsible food system. *Journal of Epidemiology and Community Health* 96:737-739.

Vertovec, S. (2007). Super-diversity and its implications. *Ethnic and Racial Studies*, 30(6), 1024–1054. https://doi.org/10.1080/01419870701599465

Wahlqvist, M. L. (2002). Asian migration to Australia: food and health consequences. *Asia Pacific Journal of Clinical Nutrition.* 11(Suppl), S562-S568

Waite, L., & Cook, J. (2011). Belonging among diasporic African communities in the UK: Plurilocal homes and simultaneity of place attachments. *Emotion, Space and Society*, 4(4), 238–248. https://doi.org/10.1016/j.emospa.2010.08.001

Ward, C., & Geeraert, N. (2016). Advancing acculturation theory and research: The acculturation process in its ecological context. *Current Opinion in Psychology*, *8*, 98–104. https://doi.org/10.1016/j.copsyc.2015.09.021

Warde, A., Cheng, S. L., Olsen, W., & Southerton, D. (2007). Changes in the practice of eating: A comparative analysis of time-use. *Acta Sociologica*. 50(4), 363-385 https://doi.org/10.1177/0001699307083978

Waterlander, W. E., Ni Mhurchu, C., Eyles, H., Vandevijvere, S., Cleghorn, C., Scarborough, P., Swimburn, B., Seidell, J. (2018). Food Futures: Developing effective food systems interventions to improve public health nutrition. *Agricultural Systems*, 160, 124–131. https://doi.org/10.1016/j.agsy.2017.01.006

Wessendorf, S. (2019). Migrant belonging, social location and the neighbourhood: Recent migrants in East London and Birmingham. *Urban Studies*, 56(1), 131–146. https://doi.org/10.1177/0042098017730300

Wimmer, A. (2004). Does ethnicity matter? Everyday group formation in three Swiss immigrant neighbourhoods, *Ethnic and Racial Studies*, 27:1, 1-36, DOI: 10.1080/0141987032000147922

Wimmer, A. (2007). How (not) to Think about Ethnicity in Immigrant Societies. Toward a Boundary-Making Perspective. In *Concepts and Methods in Migration Research*. 7-38

Wrigley, N. (2002). "Food Deserts" in British Cities: Policy Context and Research Priorities. *Urban Studies*, *39*(11), 2029–2040. http://www.jstor.org/stable/43196800

Zhou, M., & DiRago, N. v. (2023). The trajectory of the colour line in a US immigrant gateway: hyperdiverse spatialization in Los Angeles. *Ethnic and Racial Studies*, *46*(11), 2474-2501. https://doi.org/10.1080/01419870.2023.2168498

Zieleniec, A. (2018). Lefebvre's politics of space: Planning the urban as oeuvre. *Urban Planning*, *3*(3). https://doi.org/10.17645/up.v3i3.1343

Zimmerman, C., Kiss, L., & Hossain, M. (2011). Migration and Health: A Framework for 21st Century Policy-Making. PLoS Medicine. https://doi.org/10.1371/journal.pmed.1001034

Zukin, S. (2008). Consuming authenticity: From outposts of difference to means of exclusion. *Cultural studies*, *22*(5), 724-748.

Zukin, S., Lindeman, S., & Hurson, L. (2017). The omnivore's neighbourhood? Online restaurant reviews, race, and gentrification. *Journal of Consumer Culture*, *17*(3), 459-479.

Chapter 3: Methods

Background

This chapter outlines the methods used in this thesis. It includes a short introduction, an outline of the study aims and objectives and the methods used for the comparative qualitative case-studies and quantitative components of this project. For the qualitative synthesis review, the methods are presented as part of a journal paper in Chapter 4. This chapter concludes with brief reflections on my position as a researcher and the research process.

3.1 Introduction

This study, based on the theoretical underpinnings proposed by Lefebvre and Massey on the social construction of place, aimed to explore the (re)creation of local food places through the interaction of people in places in a mixed methods design.

The mixed method design described as the 'third methodological movement' combines qualitative and quantitative philosophies, techniques, methods, approaches and concepts (Johnson & Onwugbuzie, 2004), to enmesh epistemological disciplines, data and purposes, ensure standards of quality and represent the needs of various stakeholders, particularly vulnerable groups (Greene et al, 2005). Mixing methods, data or settings in research can be useful for the exploration of complex social phenomena, generation of new knowledge, examination of historical accounts and the demonstration of practical or policy impact (Brannen, 2005; Collins et al., 2012).

Mixed methods to integrate different qualitative and quantitative methods can be weighted equally or partially, in a separate, convergent or tailored design (Bryman, 2008). This mixing could be used to 'corroborate', 'enhance' or 'complement' similar perspectives, initiate new questions or explore contradictions (Brannen, 2005; Teddle & Tashakorri, 2006).

The design (and purposes for mixing) can be complex (Bryman, 2008; Collins et al., 2012) and may evolve with the implementation of the study (Greene et al., 2015), which can pose challenges in the management of ethics, data (sources/types), evaluation and integration of research findings (Collins et al., 2012). These challenges can be addressed through greater clarity and transparency in the epistemology, design, interpretation and presentation of mixed methods research (Bryman, 2007; Collins et al., 2012; Teddle & Tashakorri, 2009).

3.2 Study Aims/Objectives

For this mixed methods study of migration, place and food, which examined the complexity of food systems in place using the Lefebvre's (1991) and Massey's (2005) concepts of the social production of space, the three main objectives were:

1) To review the influence of migration on UK food environments, including a qualitative evidence synthesis of host experiences of ethnic food.

2) To conduct a comparative exploration of local food environments in the context of migration, using local areas with high/low migrant density, through the experiences of local stakeholders and its residents (qualitative).

3) To examine the association between migrant density and food purchasing patterns of UK households using market research data (quantitative).

3.3 Study Questions

The study was also designed to address the following underlying questions:

1) What are the features of the local food environment?

2) How does migration influence features of the local food environment?

3) Are there any differences and or similarities in the (perceived) features of the local food environment in areas of high migrant density compared to low migrant density?

4) Are there any differences and or similarities in the consumption practices of local residents in areas of high migrant density compared to low migrant density?

3.4 Study Design

A simultaneous mixed qualitative and quantitative design was adopted to explore the complex interaction of people in place focused on the (daily) lived experiences, particularly the marginalised members of the population.

Migration, the food system and place are complex systems comprising a range of interacting actors, institutions and processes at different levels (Castellani et al., 2015; Hasnain, 2020). This study adapted Lefebvre (1991) and Massey's (1994, 2005) concepts of place, as the social product of the interactions within it, in the study of the complex systems. These concepts that address how place is produced, organised and experienced underline how spatial practices emerge from day-to-day (hierarchical) interactions at different scales. These interactions have meaning and also generate meanings, which are constantly being redefined within the contexts of interactions that may be expressed (spatial practices) and experienced in various ways (heterogeneity of place), which may expose inequalities.

Lefebvre's and Massey's concepts of place have been increasingly adapted across various disciplines such as food policy (Sonnino et al., 2016), mobility (including migration) studies (Cresswell, 2010; Glick-Schiller & Çağlar, 2013; Sheller & Urry, 2006), geography and urban studies (Bell & Valentine,1997; Goodman et al, 2009; Parham, 2013; Phillips & Robinson, 2015). These studies have used a range of innovative methods to analyse diverse, intersecting movements and interactions in place that provide a broader understanding of the intended and unintended consequences of the socio-economic, cultural and political dynamics; which are embedded or resisted through nuanced accounts enacted in everyday settings (Sheller, 2017); methods that are also well suited to examining inequalities in place (Bambara et al., 2019; MacKain et al, 2003; Popay et al, 1998).

As part of the mixed methods design, a multi-scalar approach was also adopted that comprised of multiple ethnographies across scales within each case study site (Williamson, 2015). The use of different sites and multiple methods were employed to provide a holistic view of food places through the application of a comparative, descriptive and analytical 'lens' including migrant and non-migrant actors across different levels of governance. The case study areas were selected to ensure analytical integration and integrity of the core research questions through the process and product of an inquiry (Heale & Twycross, 2018) and to uncover the complexity of ordinary interactions, that can be generalisable or particular (Stake, 2006).

Furthermore, fluid boundaries were adopted and adapted to the context i.e. pre-defined definitions of the study subjects, boundaries, mobility or consumption patterns were not employed to avoid unintended bias or exclusions based on assumptions of bounded homogeneity (Wimmer, 2004). This approach, underscores the interconnectedness of boundaries, agents and institutions proposed by Lefebvre and Massey, that underpins the social transformation of place; and avoids the reification of boundaries, ethnicities, institutions, foods or practices (Çağlar & Glick-Schiller, 2018; Wimmer 2007).

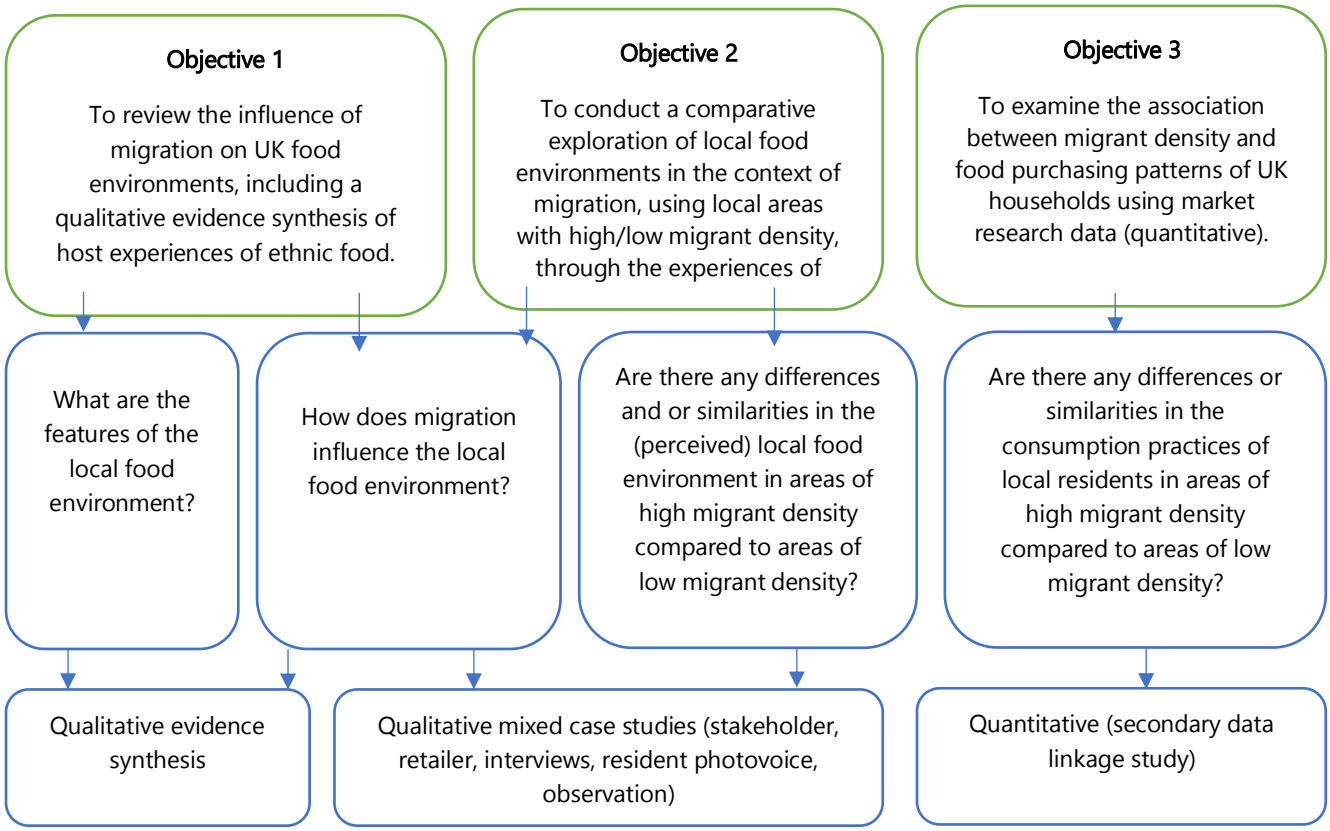
The design aimed to add new knowledge on the views of different actors, institutions and processes in food consumption through the triangulation of findings obtained from each of the study components; by integrating concepts and theories from different disciplines in understanding the complex processes associated with food consumption in place. In addition to the triangulation of evidence, the mixing also proved to be complementary, allowing further elaboration and a more nuanced understanding of the phenomena observed (Johnson & Onwugbuzie, 2004; Brannen, 2005).

The study included the following two research components split by main research methods:

1. Quantitative component, which was a single strand that comprised the linkage of secondary or retrospective data sources.

2. Qualitative component comprised multiple strands including
    a. a qualitative review evidence synthesis
    b. case studies including interviews with main stakeholders in the food environment (i.e. retailers, local authority officers and representatives of the community, participant and non-participant observation of food charities, local food policy meetings or voluntary sector organisations associated with food or migrants) and photovoice workshops with residents.

Figure 2. Diagrammatic representation of study objectives and methods



Source: Authors own.

3.5 Qualitative component

This section summarises the main methods used for the comparative case study which comprised mixed qualitative methods. In each case study area, I conducted semi-structured interviews with stakeholders, observation and photovoice workshops with residents. Two local council areas were used for the case-studies to provide a greater comprehension of the phenomena studied. Each case was treated as a 'system' or 'entity' to explore the phenomenon of interest, also known as the quintain (Stake, 2006) i.e. the impact of migration on local food systems, framed through the local food contexts, activity, experiences and interpretations of those within it.

The methods used for the qualitative evidence synthesis are included as part of the research paper presented in Chapter 4 (and excluded from this section to avoid undue repetition). The following section outlines the participant selection for fieldwork conducted between November 2019 and November 2021. Each case study site comprised stakeholder interviews, retailer interviews and photovoice workshops with residents.

3.5.1 Overview of Study Setting and Participant Selection

The two case study areas were Kingston-Upon-Hull and Hackney, Borough of London. The local council areas designated by geographical boundaries were chosen to be broadly similar in terms of the demographic characteristics with the exception of the size of the migrant population based on the Census records i.e., relatively high/low proportion of residents who were not born in the United Kingdom, based on the UK 2010 Census results. As migration was the main feature of exploration in the interaction between place and people, consideration was given to the size, duration and heterogeneity of the migrant settlements (Table 1).

Table 1. Comparative overview of case-study areas

	Kingston-Upon-Hull	Hackney, Borough of London
		
Population 2021 (2011) Census	266,500 (256,100)	259,100 (246,300)
Population Density	3731 residents/square km	13,611 residents/square km
Average age	36 years	32 years
Ethnicity – White (%)	92% (94%)	53% (55%)
Country of birth: England 2021 (2011)	86% (90%)	58% (58%)
Non-UK identity	10% (7%)	22% (23%)
English main language (adults)	90%	73%
Asylum seekers (2022)	25 per 10,000 population	4 per 10,000 population
Economically active	53% (51%)	62% (58%)
Housing – Social Rented	27% (28%)	40% (44%)

Source: Map data © OpenStreetMap contributors CC-BY-SA; nomis, Office of National Statistics (ONS), 2022,2023

3.5.2 Participant selection: Stakeholder interviews

Stakeholders were contacted for their knowledge, interests, ability to influence change and or (perceived) leadership in the local area and or in relation to migration and the food environment (Ray & Miller, 2017). I sought individuals who could provide contextual information through their work or residence in each of the case study areas, including observations of changes over time. A total of eleven stakeholders were recruited in both Hull and Hackney respectively (Table 2).

Table 2. Case Study Participants: Stakeholder interview

Case-Study Area	Stakeholder	Sector/Expertise/Role
Hull	KS0/KS1 – joint interview	Public Health
	KS2	Environmental Health
	KS3	Voluntary/Civil Society
	KS4	Voluntary/Civil Society
	KS5	Voluntary/Civil Society
	KS6	Hull Food Council
	KS7	Rooted in Hull
	KS8	Voluntary/Civil Society
	KS9	Voluntary/Civil Society
	KS10	Author/Researcher
Hackney	HS0/HS1 – joint interview	Policy
	HS2	Voluntary/Civil Society
	HS3	Environments
	HS4	Contact Migrant Community
	HS5	Markets
	HS6	Environments
	HS7	Public Health
	HS8	Contact Migrant Community
	HS9	Contact Migrant Community
	HS10	Voluntary/Civil Society

Source: Changing places, people and food project

The stakeholders were identified through enquiries at the local council, searches on the council website (for officers with food/immigration related portfolios), advice from NIHR colleagues, local news articles, membership of local civic organisations and other locally relevant local contacts. In particular, I had preliminary discussions with senior public health officers, on the initial design/research questions, to identify an overlap in research interests. In Hackney, this included a Consultant in Public Health Medicine and in Hull, the Associate Director of Public Health.

Stakeholder interviews were held in person or virtually (online via Zoom, telephone and one combined telephone and email exchange due to COVID restrictions), using a semi-structured topic guide adapted to the interviewee context, following written consent. The interviews, which lasted about an hour, were recorded with permission from the interviewee. The interviews, established the role of the individual, their work, knowledge and views of (changes to) food provisioning in the local area. For stakeholders who were also resident in the local area, their reflections included personal experiences of the food environment, where relevant.

3.5.3 Participant selection: Retailer Interviews

The selection was random, based on the willingness, availability and ability of retailers to participate in the study. The interviews were conducted during the normal course of business within the retail store (or other setting at the convenience of the retailer) and sometimes subject to interruptions. The interviews included business owners, attendants and or managers and were conducted in person (except one – at the request of the vendor, who scheduled a telephone call at a convenient time). Verbal consent was accepted (or written consent where feasible) and the interview recorded or notes taken as was convenient. The interviews ranged between five and 30 minutes using a semi-structured interview topic guide adapted to the setting.

In total, 11 retailer interviews were conducted; seven in Hull and four in Hackney (Table 3).

Table 3. Case study participants: Retailer interviews

Case-Study Area	Retailer description	Sector/Expertise/Role	Length of stay/business
Hull	KR1	Ethnic restaurant	>5 years
	KR2	Café (Hull themed)	2-5 years
	KR3	Takeaway (fish/chips)	Unknown
	KR4	Ethnic food store	>5 years
	KR5	Ethnic food store	2- 5 years
	KR6	Ethnic food store	>10 years
	KR7	Ethnic food store	2-5 years
Hackney	HR1	Pie/Mash store	>10 years
	HR2	Fruit stall	2 years
	HR3	Mainstream store	>10 years
	HR4	Fruit/Vegetable store	>10 years

Source: Changing places, people and food project

3.5.4 Participant selection: Residents

I recruited local residents separately for semi-structured interviews and for the photovoice workshops (although there was an overlap for a few participants where a photovoice workshop participant agreed to be interviewed or vice versa). Details of these recruitment activities are noted in the following sub-sections.

3.5.4.1 Resident Interviews

Residents recruited for interview were recruited across both sites through various ways. Most of the recruitment was done directly through contacts of local organisations. I joined a range of local activities such as local meetings or weekly food distribution sessions sharing project information leaflets with permission from gatekeepers of these organisations (administrators/managers etc).

I tried to recruit amongst persons who resident in areas that were socio-economically deprived (an area of particular interest to the public health authorities) or from organisations that worked with migrants. I also tried to capture details of hosts as described by stakeholders (such as 'Hull born and bred'). The average length of time for each interview was 1 hour (range 20 minutes to 2 hours).

Overall, a total of 16 residents were interviewed for the study in Hull (10 participants) and Hackney (6 participants) – Table 4

Table 4. Case study participants: Resident interviews

Area	Resident	Gender/Age - estimated/	Migrant status	Length of stay
Hull	KP1	Female/25- 50 years	International	2-5 years
	KP2	Female/25-50 years	International	5-10 years
	KP3	Male/> 50 years	Local	>50 years
	KP4	Female/> 50 years	Local	10- 20 years
	KP5	Male/ 25-50 years	International	2- 5 years
	KP6	Female/>50 years	Local	>50 years
	KP7	Female/25-50 years	Internal	20-50 years
	KP8	Female/25-50 years	Local	2-5 years
	KP9	Female/25- 50 years	Local	>25 years
	KP10	Female/ 25 – 50 years	Local*	>25 years
Hackney	HP1	Female/ unknown	Internal	>20 years
	HP2	Female/25 – 50 years	Local*	>20years
	HP3	Female/< 25 years	Local	>10 years
	HP4	Female/25 – 50 years	Local	>10 years
	HP5	Female/> 50 years	Local	>10 years
	HP6	Female/ > 50 years	Local	>20 years

*Source: Changing places, people and food project * individuals had a mixed migrant/local background.*

3.5.4.2 Photovoice Workshops (Residents)

As part of this research, photovoice was used to capture the views of local migrant and non-migrant residents in the case study areas. Following discussion with the public health officers and relevant stakeholders, I aimed to recruit local residents with characteristics of particular interest to local areas (such as specific age groups, residents of deprived neighbourhoods considered food insecure, targeted for interventions or migrant communities of defined ethnic or racial background). In addition, I wanted to capture (if I could) the initial impressions of migrants who were new to the local area; whose early impressions (and or shocks) of navigating new spaces could provide a different insight of interactions in place, which long-term residents with established everyday rhythms could miss.

For the exhibition, I solicited support from relevant stakeholders, including local councillors, to keep them engaged as the study progressed. These stakeholders were invited to attend the photovoice exhibition held at the end of the workshops.

The photovoice workshops took place across the two sites: Kingston upon Hull, East Yorkshire (March 2020, August 2021), in and Hackney, a London borough in March 2020 and July – November 2021. I attended photovoice training in London with the Photovoice organisation in August 2019. A total of 28 participants were recruited in the study for the photovoice sessions (13 in Hull;15 in Hackney).

The main focus of recruitment was the representation of socio-economically vulnerable individuals, those with responsibility for provisioning (such as women or mothers) and migrants, particularly relatively new migrants to the local area. Naturally occurring groups were sought to ease group dynamics wherever possible - hence some groups comprised wholly of migrants and others a mix of both migrants and non-migrants. Furthermore, the format of the photovoice workshops were adapted to the settings where the study was conducted as many organisations changed their mode of operation due to the COVID restrictions.

Recruitment of local residents was through local community organisations or civil organisations that worked with or served socio-economically vulnerable residents including migrants using a recruitment flyer. First, I explained the objective of the workshop to relevant gatekeepers (civic organisation managers or officers) and received authorisation in each case to approach those who used their services and hand out fliers or recruit by word of mouth. For the migrant groups particularly, I joined weekly activities as a participant observer before recruiting people directly. Initial attempts to recruit suggested a need to develop trust in these settings.

In two instances, I was given an opportunity to 'advertise' the workshop during regular meetings and circulate the invitation flier to interested members of the group. The recruitment flyer was an invitation to a photography event, where participants would have a chance to talk about their photos. Interested persons were provided with an information sheet to consider before agreeing to be part of the study. The information sheet included an overview of the format and content of the workshops and contact details for the researcher and my main supervisor (Appendix 3). Where interest was noted, the contact details of potential participants were collected to follow up and arrange interviews.

The photovoice workshops comprised of two sessions, an introductory and a main workshop, held at a central location with projector facilities for PowerPoint presentations (and or a location familiar to the participants where possible e.g., usual meeting place). As part of the workshop, refreshments were provided and transport costs reimbursed where it was requested.

The introductory workshop included an overview to the proposed research project, training on how to take photographs (PowerPoint presentation) and the use of study cameras (where these were provided). The introductory session also comprised photo elicitation exercises to establish trust and develop group dynamics (i.e., as ice breakers). All participants were given the opportunity to ask questions and to provide written consent. Participants who agreed to take part in the study, completed consent forms.

At the end of the introductory workshop, each participant was given a pack containing a copy of the information sheet, consent form, a fully charged camera (or for participants who agreed to use their personal mobile devices, the choice to join a Photovoice WhatsApp group or to send pictures taken directly to the researcher via email using details provided on the information sheet) and additional leaflets to share with anyone who made enquiries about the project. Each pack also included my (the researcher's) contact details and contact details of the main supervisor also. For participants who agreed to join the WhatsApp group (set up solely for the purpose of the workshops), the photographs taken could be shared directly with the group, uploaded without any text. Those provided with study cameras, brought the photographs taken on the cameras, which were downloaded at the next session.

Participants were given a week to take photographs on proposed topic agreed during the introductory discussions: 'Something important to you about food or the places where you get food in your local area'. I (as the researcher) was also part of the WhatsApp group and acted as moderator, adding thanks for photographs posted; the forum was also used to post reminders/ details of planned workshops/exhibition events (e.g., venue, time/dates). Those who were not on the WhatsApp group were contacted using email or by telephone (whatever suitable method of contact was agreed following the first session).

Participants returned the following week to a second (main) workshop where their photographs were projected onto the screen using Microsoft PowerPoint for discussion by the group (one group returned for a third workshop to continue discussions on the photographs). The photographs were collated either at the start of the meeting (from participants who used the study cameras) or directly from the WhatsApp chat group set up for the project (or via email, for participants who did not join a chat group).

As the study was conducted during a period when COVID19 restrictions were in place, additional adjustments had to be made and the workshops comprised a mix of in-person and online sessions.

For part of the period, some COVID-related restrictions were still in place and this influenced the structure and format of the workshops.

Pre-COVID, each workshop session was conducted in person and lasted 3 hours comprising activities and a tea/coffee break. However following COVID, this was adapted to one-hour sessions (to align with government guidance/restrictions about limited contact with others outside the usual 'contact bubble', to address concerns expressed by participants regarding mixing in social situations[1] and to prevent screen fatigue for online sessions).

There was no limit placed on the number of photographs participants could take, however during the group discussions in the second workshop, participants were asked to prioritise three photographs they wished to discuss. For their time, participants were offered two gift vouchers worth £20 each (or £15 each for online workshops) at the end of the second workshop.

At the end of the workshops, I organised photography exhibitions held in central locations at each site. Each of the sites also had an additional review workshop at the end to prepare for the exhibition. This was a separate session following the photovoice workshops, where participants curated the themed photographs and reviewed plans for the workshop (i.e., agreed broad themes generated from the collection of photos within each site and the related texts). Details of the plans made for the exhibition, including the date, invitees and plans for the day were discussed and agreed.

I organised the hire and set-up of the exhibition space including refreshments, invitation to guests, printing, framing and hanging of photographs, preparation of information sheets, agenda and insurance. The insurance at both sites was kindly underwritten by the London School of Hygiene and Tropical Medicine. Participants were encouraged to take part in the exhibition set up and planning, where possible (e.g., invited to put up the photographs, circulate information leaflets or take photographs during the event).

The exhibition launch event comprised workshop participants, local councillors, officers from the local council and civil society groups. The one-hour launch event included dialogue between workshop participants and the key stakeholders, which I moderated. Each guest received an information sheet (summarising the main themes of the displayed photographs) and a feedback

[1] Additional precautions were taken during the COVID period to ensure participant safety. This included the provision of hand-gel, face masks, ensuring the adequate circulation at the workshop venue and limiting cross contamination (e.g., providing individual pens for endorsing consent forms, providing refreshments in individual packages etc).

form; refreshments were provided. Specific details of the participant recruitment in each of the study sites is provided in the following sections.

3.5.4.1 Hull

In Hull recruitment took place via two civil society or charitable organisations that met weekly. One of the organisations provided support to refugees/asylum seekers and the other was a community development organisation which provided food and other employment/ coaching and (food) support to vulnerable people in deprived areas of Hull. Two photovoice workshops were organised that comprised of 13 participants over five sessions. The date and time of the photovoice sessions were scheduled to coincide with the food parcel collection dates, hosted at a nearby venue.

3.5.4.1.1 Refugee/Migrant only group

I recruited participants from weekly sessions organised by a faith-based organisation to distribute food, provide advice and other necessities to refugees and asylum seekers; breakfast and lunch was also served to those who attended. I observed and participated in several weekly sessions before attempting to recruit from the service users – mainly refugees who attended. The sessions were often busy and the service users in varying levels of distress, need and language proficiency. I befriended those I met, shared details of the study and provided a copy of the recruitment flier – prospective participants had to commit to attending both workshops. Some of those approached, registered interest but did not feel confident to discuss in a group; there were also concerns about childcare.

The first workshop, held in March 2020, comprised of migrants (refugees/asylum seekers; n = 6[2]) who had lived in Hull for less than 1 year and those with children were asked to bring them along. The first/introductory workshop session, which was pre-COVID lasted three hours which comprised of a range of activities, including photo elicitation exercises and lunch break. All participants received study cameras.

[2] A total of nine persons were recruited for the workshop but only five completed the workshops. Two of the participants had immigration appointments on the scheduled workshop date – one of the participants was able to attend one workshop. The other two declined to attend, citing other commitments (they had expressed concern about their English language proficiency when recruited).

The second/main workshop session a week after (to discuss photographs taken) also lasted three hours). An officer from the organisation where the participants were recruited from sat in briefly at the start of the second workshop but left before the discussion of the photographs.

3.5.4.1.2 Community development (mixed migrant and non-migrant)

For the second workshop held in August 2021, seven participants were recruited. Most of the participants (n=5) were recruited directly through the civil organisation (and two via snowballing) – this group was mixed comprised of both migrant and non-migrant (UK and Hull born and bred) background (Table 5). Recruitment took place at the food distribution centre, while respondents queued for food parcels, and was enabled by a member of staff, who referred each of the service users to the researcher (me, I was standing close by) when handing over the parcel.

In total, three sessions were held in line with the COVID restrictions, designed to last for one-hour each (i.e., the activity sessions and presentation slides were shortened) – those with young children were allowed to bring them along, no extra childcare arrangements were made. The first two sessions were held at the office of the civic organisation and the third session[3] was held at the Central library in the town, which included a video-link for one participant who was unable to attend in person. An officer from the organisation sat in for the first/introductory workshop but did not contribute to the discussion. Two of the participants used the study cameras and the remaining posted their pictures via the WhatsApp group set up for the study.

3.5.4.1.3 Hull Photovoice Exhibition

The exhibition launch was held on the 3rd of November and attended by 24 people including one of the local councillors at the Hull central (local) library. Officers from the council also attended and addressed specific questions raised by the photovoice workshop participants. The exhibition was hosted at the Hull central library for one week, the Welcome House Hull (a migrant organisation) for another fortnight and online by the Hull Food Council (https://nurturehull.org.uk/virtual-exhibition/).

[3] The third session was organised in agreement with all the participants to give an opportunity for a fuller discussion.

Table 5. Description of Hull Photovoice Participants

Recruitment/Group (format of the workshop)	Participant (gender)	Length of residence	Age group (estimated)
Refugee organisation/ Migrant only (face-to-face/*telephone link)	OD1(female)	Less than 1 year	<25 years
	OD2 (female)	Less than 1 year	<25 years
	OD3 (female)	Less than 1 year	<25 years
	OD4 (male)	Less than 1 year	<25 years
	OD5 (female)	Less than 1 year	<25 years
	OD6 (female) *	Less than 1 year	<25 years
Civil organisation – mixed migrant and non-migrant background (face-to-face/* video link)	GT1 (male)	>10 years	> 50 years
	GT2 (female)	Born in Hull	>50 years
	GT3 (female)*	>5 years	25 – 50 years
	GT4 (male)	< 2 years	< 25 years
	GT5 (female)	<5 years	25-50 years
	GT6 (female)	< 5 years	25-50 years
	GT7 (female)	< 5 years	<25 years

Source: Changing places, people and food project

3.5.4.2 Hackney Photovoice Workshops

In Hackney, three separate groups were convened for the photovoice workshops, which comprised of a mix of both virtual (online) and face-to-face workshops that took place between July and August 2021, following the COVID-pandemic. The groups included a mother/toddler group, a migrant women's forum and chefs in training at a civic society organisation. A total of 16 participants were recruited for the workshops, that comprised of seven sessions (Table 6).

Table 6. Description of Hackney Photovoice Participants

Recruitment/Group (workshop format)	Participant / Gender – Female	Length of residence	Age group (estimated)
Hackney	XN1* (female)	>20 years	25-50 years
Women's group/	XN2 (female)	< 2 years	25-50 years
Migrant background	XN3 (female)	>20 years	25-50 years
(face-to-face/	XN4 (female)	>2 years	25-50 years
*first workshop online)	XN5 (female)	>5 years	25-50 years
Trainee Chef Group /Non-migrant	OTB	>20 years	<25 years
background/ face-to-face	KDB	<2 years	<25 years
(*second session only)	HRB	<2 years	<25 years
	ARB*	< 2 years	<25 years
Mother/toddler group/Mixed	SB1 (female)	< 5 years	25 – 50 years
migrant and non-migrant	SB2 (female)	< 2 years	25 – 50 years
background	SB3 (female)	> 5years	25 – 50 years
(online/*second session only)	SB4* (female)	> 5years	25 – 50 years
	SB5* (female)	>10 years	25 – 50 years
	SB6 (female)	< 2years	25 – 50 years
	SB7 (female)	>10 years	25 – 50 years

Source: Changing places, people and food project.

3.5.4.2.1 Mother and toddler group

The photovoice workshops were organised as hybrid sessions and incorporated into the usual weekly meetings for the duration of the project, with the permission of the coordinators who joined the session and helped bridge the facilitation between the project and their usual weekly discussions.

The photovoice sessions were organised over two weekly meetings (i.e., introductory and main/follow up session) with a separate review session to plan for the exhibition. The meetings took place at the host's location, was held in a large room set up with play and fluffy toys for mothers who came in person with their babies or toddlers. The seating plan was arranged in a

semi-circle, those online joined using a Zoom link provided by the coordinator as part of the usual meeting. Most of the participants joined the session online.

To support recruitment, I was invited to observe one of the usual meeting sessions, where I introduced the objectives and format of the planned workshops. Those who agreed to join the photovoice workshop completed a study consent form prior to the start of the workshop (for mothers who joined online, a copy of the information sheet and consent form with a stamped return envelope addressed to the researcher was sent via the coordinator who had their contact details). As different women joined the session weekly, attendance varied slightly at subsequent sessions. Mothers (new) who joined the group following the introductory photovoice workshop and consented to be part of the study were included.

Vouchers provided at the end of the workshop were also sent to participants by post, acknowledged by return of a receipt in a stamped self-addressed envelope (addressed to me, as the researcher).

In total, seven women participated in the photovoice workshops.

3.5.4.2.2 Migrant women's group

The second group comprised of a forum run by and for women of both a migrant and non-migrant background. I learnt about this group from the Hackney Council website and joined the group to expand my network in Hackney. The group usually met in person but had adapted to an online format during the pandemic, which was when I joined.

To recruit participants, I discussed with the forum coordinators and was given an opportunity at the end of a meeting to speak briefly about my project and to recruit (handing out fliers) at subsequent events. An electronic copy of the recruitment flier was also posted on the WhatsApp chat group by the forum's communication officer; interested persons contacted me directly.

Three photovoice sessions were organised in person due to planned holidays/unforeseen commitments at one of the follow-up sessions i.e. all those who consented to participate attended an introductory session and a third session, which had to be organised when some of the participants could not attend. A separate introductory session (online via Zoom) was organised for one participant who missed the introductory session; this included an overview of the project including a PowerPoint presentation and the opportunity to ask questions.

All the participants in this group, agreed to use their personal mobile devices to take photographs and to join a WhatsApp group set up specifically to post any photographs taken.

3.5.4.2.3 Chefs in training

The third group was set up via snowballing. I was introduced to the group through the coordinator of the Mother and Toddler group at the Shoreditch Trust. She facilitated a meeting with the training coordinator who allowed me to recruit from the set of chefs in training and suggested suitable times in their training schedule to conduct the workshops over the two-week period (for those that chose to participate).

The group, which comprised of 4 young men met in person at a meeting room provided by the organisation for about one hour each. One participant only joined at the second session.

The group agreed to use their mobile devices to take photographs (and declined the use of a study camera). The study photographs were sent to the researcher directly via email (details provided on the information sheets). Email reminders were sent to participants during the week.

3.5.4.2.4 Hackney Exhibition

The Hackney exhibition/ launch event was held at the Waterfront café (part of the Shoreditch Trust) which also hosted the exhibition for about one month. The launch event was held on the 20th of October and attended by about 27 people, included a local councillor and the Hackney Speaker. Other attendees included the participants, invited officers from the Hackney council and representatives from some of the organisations that were involved. I moderated the session, which included a short introduction and time for discussion, feedback and reflections by those present. One of the officers from the council present addressed specific questions from participants, which focused on managing waste.

3.6 Reflections

3.6.1 Research set up

This research was intentionally focused on place in every-day settings using a mix of methods to avoid 'essentialising' differences in ethnic/migrant status and to disrupt assumptions and preconceptions based on stereotypes experiences by 'refocusing the lens to non-ethnic phenomena' (Fox & Jones, 2013; Glick-Schiller & Çağlar, 2013; Wimmer 2004). However, a focus on place, is unlikely to have completely eradicated potential bias as the positionality of place, in and of itself, would be reflected by the context of the time of the research. This context would be expressed in the narratives of research participants, available data (Williams, 2014) and by the experience of the researcher (for example COVID, as a context during the period of research).

The main impact of COVID restrictions was access and communication. I had to creatively adapt the research to fit the existing structure that required more time to organise. There were delays in setting up (telephone/online) interviews while awaiting consent forms sent via post (which were under significant pressure due to the limited movement); and the need for much more information from potential participants (contact details) to follow up that may not have been necessary at a face-to-face meeting (where all administrative aspects could be addressed at once i.e., consent forms, vouchers etc). This also meant that participants who were not willing to share these details or who did not have resources or the know-how for a virtual meeting could have inadvertently been excluded. I tried to mitigate the impact for selection bias and utilised the existing structure/ framework/ infrastructure of established groups recruited to the photovoice workshops, where possible (for example, the mother and toddler group already had a hybrid format, which worked for the mothers, which I could access through a gate-keeper).

The photovoice workshops were a form of participatory action research (PAR), used to co-produce social change by empowering individuals to reflect and act (Olshansky et al., 2005); it is recommended for exploring health inequalities (MacKain et al., 2003). In this study, participants acknowledged during the exhibition that the photovoice exercise was an opportunity to express themselves, to feel that they could be heard but the study did not achieve social change. Although there was relatively good engagement at both sites (during the workshops and) at the exhibition events, with interesting discussions on managing waste (Hackney), food quality including nutrition and safety (Hull); there was little prospect of 'social change' afterwards even though I tried to follow up enquiries with local officers after the event. The issues identified during the workshop

and discussed during the exhibition were complex and required action beyond the authority of the local council (i.e., there was no one officer to hold accountable).

Furthermore, facilitating social change would require more time, leadership and resources than the study would allow or that I could afford at that point in my studies. There were also dynamics of power in the exchange of lived/'official' knowledge (during the exhibition launch) that I had not envisaged (or prepared for, particularly in Hull, which had a greater attendance of refugee/asylum seeker populations at the event). In addition, there were unacknowledged tensions in my role as a researcher, the student and the 'unofficial' spokesperson for the groups. I naively assumed that the exhibition (as a culmination of the workshop activities) would result in an 'organic' movement to galvanise change but facilitating change would require leadership and strategy that was not built into the study design. Moreover, 'shifting the responsibility' for driving the social change (Jordan, 2003) would have been difficult to establish within the short period set aside for the workshops (~ 3 weeks). To extend the discussion beyond the opportunity for knowledge exchange (which was my end point) needed a different approach to the workshop design (i.e., to build in sustainability beyond the lifetime of the study).

3.6.2 Positionality

Positionality in research refers to the stance the researcher adopts which influences the conduct, results and deduced meanings of the research, such as the worldviews, assumptions, beliefs or values (Holmes, 2020). Researchers need to acknowledge how their lens of experience and or the experiences of those with whom they interact can influence the research.

My identity, physical attributes, gender, nationality, lived experience and knowledge of nutrition were integrated into the research as were my assumptions, which changed as the research progressed and my knowledge of the subject(s) grew. My visible difference (as non-White and by implication 'not originally from here' i.e., an international migrant) designated me as the 'outsider', but again as, the 'insider' depending on the context. Furthermore, as a temporary migrant to the fieldwork sites with no prior knowledge of the areas, I had the opportunity to explore the spaces as an outsider. The lack of previous engagement may have enabled a relatively objective exploration of the place and interactions in place.

My own lived experience, as a 'serial' migrant (most recently to undertake this study) required a liminality negotiated in time and space that could not be 'bound' by the research process and may

have facilitated (or mitigated) access, trust and insight. To understand the impact of my positions, as a 'researcher', 'student', 'fellow-migrant', 'native English-speaker' on the process of the research, I completed a reflective record following each interview, which had a standardised format. This record comprised details of the setting for the interview, distractions or disturbances noted, main points of discussions, observations of the interviewee or group attitude or reactions, reflections on the timing and tone of the interview and potential improvements.

I was often forced to reflect on, review or (re)negotiate my position in response to both direct and indirect scrutiny from colleagues, friends, gatekeepers and the study participants, which made it necessary to (continually) reflect and to justify to myself and others the rationale for my research. I was also conscious of the 'foreign' gaze and the implications for (perceived) bias (Abimbola, 2019) that was heightened by the media representations of racial/ethnic differences (particularly during the coronavirus pandemic and following the death of George Floyd in the United states).

The reflections helped me to realise the need to 'trade' in trust in order to communicate effectively (Wilkins, 2018). To improve engagement, I spent time with participants in different settings, followed up requests for information and encouraged co-production where possible, such as in the planning of the photovoice exhibition.

3.7 Qualitative Analyses

The data presented was transcribed verbatim and coded thematically using both a deductive framework (based on concepts of place by Lefebvre and Massey) and an inductive coding framework which drew on the relevant literature (Saunders et al, 2023; Gale et al. 2013).

The analysis included multiple readings of the transcripts to identify experiences and meanings participants associated with food or the food environment in the local area. Thick descriptions of the records from each transcript were mapped, using 'data-driven codes' to identify related food or food place experiences and meanings, which were grouped into themes and sub-themes.

The analysis was conducted separately for each of the case-study areas as it was assumed that the groups from Hull and Hackney, would have different themes; although again, an overlap in the themes was expected. The result for each case study area was discussed separately.

Furthermore, although the focus of the study is on migration, the definition of the migrant was not simple or easy to apply. This became evident during the literature review and was even more apparent during the fieldwork where multiple identities were reported. The decision was made during the research process to allow participants to express how their identity and or migrant status influenced their experiences (i.e., as an international or internal migrant or seasoned traveller, mixed-marriage relationships, or non-migrant) to avoid making assumptions based on a perceived migrant background. This approach draws on phenomenological methods that seeks to empower actors in describing their lived experiences on their own terms in order to gain deeper insights to how people understand their experiences (Groenewald, 2004; Bliss,2016).

3.8 Quantitative Component

3.8.1 Introduction

The quantitative component of the study was a cross-sectional analysis to determine if there was an association between migrant density and diet quality of household food purchases using a linked Kantar FMCG panel – Census 2011 dataset.

The focus of this analyses was to understand if migrant density was associated with everyday household food purchasing practices. Lefebvre described the household as an 'assigned' social space that represents the social relations of reproduction i.e., the smallest unit of social interactions and noted that "the organisation of the family interferes with the division of labour" (1991: 32).

Migrant density was measured as the number of persons of non-UK birth as proportion of all residents within a Lower layer Super Output Areas (LSOA). Each LSOA comprised an average of 700 households clustered within a similar geographical location that potentially shared similar resources or spaces of social interaction. Applying Masseys argument on the multiplicity of place (2005), areas with a greater migrant density could be assumed to have many more plural spaces as social interactions would include all the transnational experiences of migrants in those local areas. Furthermore, there is evidence that different measures of diet quality, 'tap' into different underlying constructs (Alkerwri et al., 2015), which could inform the pattern of social interactions in different places. This analysis was designed to determine if the level of migrant density (as a proxy for level of social interactions) was linked to household purchasing food practices assessed using four measures of diet quality.

The following section provides a brief background to relevant literature in this section and describes the process of data preparation, linkage and definition for the four measures of diet quality.

3.8.1.1 Locating migration in food policies

Place, as a frame for addressing health inequalities, is increasingly being reviewed through a multidisciplinary lens (Kawachi & Berkman, 2003) that aims to capture the complex interactions of its context and composition i.e. social, economic, cultural, psychosocial and physical resources (Castellani et al., 2015; Cummins et al., 2007). Historical, structural and institutional factors shape

patterns of settlement, which contribute to unequal neighbourhood experiences, and produce social and cultural practices such as consumption (Carter et al., 2019; Osypuk & Acevedo,2010; Riosmena & Massey, 2012; Song & Kin, 2022; Story et al., 2008). In this study, migration is proposed as a feature of both the context and composition of place, reflected in the food consumption (purchase) practices of its residents.

Sonnino et al. (2016), advocating for a place-based approach to food policy, suggest that policies should recognise the diverse and dynamic spatial, contextual and compositional components of place to facilitate food practices that promote health. A malfunctioning food system leads to consumption practices that contribute to the burden and unequal distribution of diet-related noncommunicable diseases (Abbafati et al., 2020). Rising trends in chronic conditions such as cardiovascular diseases, some cancer and diabetes, are health outcomes associated with poor quality diets characterised by the low intake of fruits and vegetables and high consumption of processed foods, high in fat, sugar and salts (Abbafati et al., 2020; Schwingshack et al., 2017; Mozaffarian et al., 2014; Te Morenga et al., 2014; Boeing et al., 2012).

However, research on neighbourhood effects are complex. An 'artificial' distinction is usually made between the contextual and compositional features of place (Cummins et al., 2007; Macintyre & Ellaway, 2003). Equivocal findings on place-based studies of food environments (Carter et al., 2014; Cobb et al., 2017) may be due to methodological limitations in quantifying neighbourhood disparities (Oakes, 2006), particularly in increasingly diverse populations (Osypuk & Acevedo-Garcia, 2010; Osypuk & Galae, 2007).

3.8.1.2 Changing Populations in Place

Migration directly impacts both the composition and the context of place often manifest in the food environment. Migration transforms place resulting in the introduction and greater diversity of food products, industries, markets, retail outlets and consumption patterns (Andreeva & Unger, 2014; Demangeot et al., 2016; Penaloza & Gilly, 1999; Wahlqvist, 2002). Place in turn, shapes the experience and opportunities of those who settle in it, including migrants, through the interaction of government policies (Li &Yuan, 2022; Penaloza, 2007; Story et al., 2008), housing and welfare systems (Anderson et al., 2018), access to resources – natural, labour market and cultural resources - including family and social networks (Buch et al., 2014; Bechthold et al., 2019; Carter et al., 2019; Jansen, 2014; Neidomysl, 2008). These features of place are dynamic and vary with time such as the

generations or waves of immigration (Carter et al., 2019; Riosmena & Massey, 2012); which can impact health.

For example, studies of areas with a high density of migrants or ethnic minority populations, also termed 'ethnic enclaves' have found health promoting behaviours (Osypuk et al., 2009) and health and wellbeing outcomes (Becares et al., 2012) that could be fostered by close social networks and transnational attachments (Li & van Dam, 2020)

3.8.1.3 Changing Diet Quality, Place and People

Diet quality, which captures the nutritional adequacy of consumption, is both a key concept of food security and the social food environment (Alkerwi et al., 2015). It is measured by indices that describe the frequency of intake (or purchase) of specific nutrients, foods or single/combined food groups that adhere to national guidelines (Alkerwi et al., 2015; Gomez et al., 2019).

A review of diet quality in 187 countries between 1990 and 2010 by Imamura et al (2015) found slight improvements over time in the consumption of ten healthy items (fruits, vegetables, legumes, nuts and seeds, whole grain, milk, polyunsaturated fat, omega-3 fish, and dietary fibre) matched by a rise in the consumption of unhealthy foods (processed meats, sugar sweetened beverages, trans or saturated fats and dietary cholesterol). Greater standards of living accounted for the better diet quality in France (Caillavet et al., 2019). Higher incomes and distribution of education also explained improved diet quality in the United States of America, particularly for the consumption of wholegrains, nuts, seeds and legumes between 1999 and 2012, which varied by race and income category (Rehm et al., 2016; Beatty et al., 2014). Using decomposition analyses based on two 24-hour dietary recalls for 12 food products in the National Health and Nutrition Examination Survey between 1994 and 2010, Smith et al. (2019), estimated a 5%-point increase in the healthy eating index (HEI) scores. A fifth of this change was explained by an increase in within-home consumption, educational attainment, use of nutritional information, consumer attitude and population diversity; higher ethnic/racial diversity accounted for a total of 5% in the HEI score. Most of the change in HEI could not be accounted for.

There are several measures of diet quality that could be used to inform consumer choice and public health interventions. The use of more than one measure could identify different underlying concepts or mechanisms associated with the quality of the food choices. For example, the cross-sectional study in 2014/15 by Gomez et al. (2019) to estimate the association between measures of diet quality and the risk of chronic diseases of eight Latin American countries, found varying effect

sizes with the measure used; suggesting different underlying concepts. The study, which included the healthy eating index (HEI), the alternative healthy eating index (AHEI) the healthy dietary index (HDI), diet quality score and the diet diversity score (DDS) found a reduction in cardiovascular disease by 14 – 28%, certain cancers (lung, colorectal and breast cancer) by 7-35% and a 17 – 42% reduction in all cause-mortality in adults aged 15-65 years. In addition, Alkerwi et al. (2015) identified conceptually distinct pathways linking diet quality to socio-demographic factors. Age, gender, race, country of birth, occupation/employment and educational level were associated with food choice (i.e. tastes, preferences shaped by information and social networks) while household size, economic factors such as total and disposable income moderated the energy density and diversity of diets through food prices.

Using a place-based approach could provide a better indicator of food system vulnerabilities, characterised more recently by unstable agroecological and market environments that impact food distribution and price (Sonnino et al., 2016). This study aims to examine the relationship between migrant density, as a feature of place and the diet quality of household purchases as a proxy for consumption practices in a representative sample of households in Britain.

3.8.2 Aim

This study aims to determine the independent association between migrant density and diet quality patterns of food purchases amongst households in Britain.

3.8.3 Objectives

To determine the independent association between migrant density and the diet quality of household purchases assessed using:

Two measures of food inadequacy:

i) The proportion of 'less healthy' kilocalories using the UK Department of Health and Social Care nutrient profiling model which defines products high in fat, sugar and salt (HFSS)
ii) The proportion of kilocalories obtained from ultra-processed foods

Two measures of food adequacy:

i) The proportion of kilocalories obtained from fruit and vegetables
ii) The proportion of kilocalories obtained from diverse foods

3.8.4 Methods

3.8.4.1 Study Design

A cross-sectional analysis was conducted using the 2012 Kantar Fast Moving Consumer Goods (FMCG) panel dataset. Permission to use the Kantar FMCG panel data was obtained from Dr Laura Cornelsen, LSHTM (personal communication via email: July 2019 – Appendix 2).

3.8.4.2 Sample

The Kantar 2012 FMCG panel dataset used for the study comprised food purchases consumed at home for a sample of households, in Great Britain (England, Wales and Scotland) representative of the UK population, which regularly reported purchases (Gritffiths et al., 2018). The Kantar 2012 panel, which was the earliest dataset available for analyses and was the closest time to the Census 2011 data, which could be used in the linkage as part of the analyses.

3.8.4.3 Data Sources

An overview of the data sources and datasets used in this study are outlined in the following sections.

3.8.4.3.1 Kantar FMC panel Data: Kantar is an international market research organisation that provides commercial data on food sales and purchases. The Kantar collates details of product level purchases by price, volume, brand and nutrient content and place of purchase used by private companies to monitor market shares and performance and are increasingly being used in public health research (Bandy et al., 2019). These data, collected continuously from a geographically stratified sample of households designed to be representative of the population, are collated using hand-held scanners and uploaded till receipts, verified and updated directly by Kantar (Eyles, et al., 2013; Mhurchu et al., 2011). Panel retention rates are high with an average follow up period of 4.1 years (Berger et al., 2019; Quirmbach et al., 2018). Kantar remunerates participating households with a £100 shopping voucher. Each household also provide additional sociodemographic details of the household including size, composition, housing tenure, social class, geographical region, postcode district; and main shopper characteristics (age, gender ethnicity, and highest educational qualification).

The geographical unit provided in the Kantar FMCG panel is the postcode district that is made up of the first one or two alphabets (letters representing the area) and numbers of the postcode (ranging from 0-99). The postcode district was the 'key' or unique identifier used to link the Census data and other information with a geographical lookup.

For this study, three main types of aggregate-level Kantar FMCG data files were provided for analyses.

a. Household Purchase Data: The data comprised details of all household purchases in the Kantar FMCG 2012 panel at the product level, including relevant product codes, weight/volume, market/sub-market codes, week/day and year of purchase for each household in the panel. Separate data files that included details of the market and submarket files were also provided (product descriptions at market and submarket levels with respective codes).

b. Household Description Panel Data: The household panel descriptive dataset comprised details of the Kantar FMCG 2012 panel including household (size, presence of children, income, tenure), main shopper (age, ethnicity, social class, education, body mass index) and regional characteristics (region) in a row for each household. This file also contained the first three digits of the postcode, used to link the Kantar FMCG 2012 panel data to the Census data. Gender of the main shopper was excluded from the original dataset.

c. Household Nutrient Profile Data: This file comprised aggregate information used to classify the total annual household purchases into 35 pre-defined food groups i.e. one row per household.

3.8.4.3.2 Census Data: Details of international migrants defined by the country of birth was obtained from the UK 2011 Census provided by the UK Data Service via INFUSE. The Census is the most reliable and accessible data source, with the best coverage, on the characteristics of immigrants (i.e. persons of non-British birth) in Britain (Harris et al, 2015). It is a mandatory household survey held every ten years that collates information on the demographic and socio-economic characteristics of UK residents. It is used to inform policy and allocate resources and is produced by the Office for National Statistics. The UK Data Service provides Census data through a flexible interface that allows users to download copies of metadata files from the Census directly using a selection of preloaded Census topics and geographical areas (as rich text files – rtf or comma separated values – csv files).

For this study, a copy of the UK Census report for country of birth i.e. harmonised version that provided consistent details across England, Wales and Scotland was used. This comprised a breakdown of the total number of residents recorded i.e. people in the lower layer super output areas (LSOA, equivalent to datazone areas in Scotland) by continent/sub-continent of birth (e.g. Europe/Western Europe). No additional permissions were required to access the data, which are open source and anonymised.

In addition, look-up files required to link the Census and Kantar FMCG Panel dataset were also obtained from the UK Data Service (via Geoconvert page). The lookup files comprised a record of postcodes for each of the Census geographical units (LSOAs for England and Wales). An additional lookup file was obtained for the datazones in Scotland through Public Health Scotland (Public Health Scotland – accessed 2021: 2011 census 'LSOADZ11DM15jul).

3.8.4.3.3 Area Deprivation Data– Index of Multiple Deprivation*:* The index of multiple deprivation is a summary measure of relative deprivation that compares small geographical areas across a range of measures for weighted domains comprising income, employment, skills, health, crime and barriers/access to services, physical environment, living environment, community safety and housing. However, the indices of multiple deprivation for different parts of the UK are not comparable due to the variation in indicators used, periods covered, size of the population included and population weights used for each domain (Abel et al., 2016).

Abel et al. (2016), provide a comparable way of measuring socioeconomic deprivation for each of the countries in the UK using an adjusted index of multiple deprivation score calculated from the income and employment data (i.e. domains with the greatest weights). The pre-prepared csv file, provided free to download by the authors (Abel et al., 2016), comprised details of the country, area code (e.g. LSOA or data-zone), original income and employment scores, original quintile score, UK–wide adjusted index of multiple deprivation scores and ranks recalculated for England, Wales and Scotland by postcode areas for Scotland (SIMD 2012), England (IMD, 2015), Northern Ireland (2010) and Wales (2014). However, the data for Northern Ireland was not relevant to this study. The prepared file was linked to the Kantar dataset using the postcode district derived from the full postcode on the file.

3.8.5 Data Preparation and Linkage

For this study, a number of datasets were linked to produce the main dataset used for the analysis. For the Kantar FMCG panel data, the household by product level dataset were linked to the household characteristics to create a single household per record comprising categories of kilocalories purchased for consumption at home and characteristics of the household, main shopper and area; using the unique household identifier on both datasets.

The aggregated Kantar 2012 FMCG product-panel dataset, which comprised details of the household socio-demographic characteristics and product purchases, was then merged to the linked Census- adjusted deprivation dataset using the postcode district. The postcode district on the Census- adjusted deprivation dataset was derived from the full postcode on the merged geographical data. All the households on the Kantar 2012 FMCG panel merged unto the Census-Adjusted deprivation records, except one, which was excluded from the final analyses.

3.8.6 Exposure and Outcome variables

The following variables definitions were included as part of the analysis in this study:

Migrant density, which is the exposure variable for this study, was described as the proportion of persons of non-UK birth (i.e. foreign) of all residents within a postcode district derived from the Census 2011 records; included in the analyses as a continuous variable.

The outcomes for the study were defined by four measures of diet quality.

- High Fat, Sugar and Salt Consumption (HFSS): The proportion of 'less healthy' kilocalories obtained from household food purchases that are high in fat, sugar and salt (HFSS) defined using the UK Department of Health and Social Care/Food Standards Agency nutrient profiling model.

- Ultra-processed foods: The proportion of kilocalories obtained from ultra-processed foods: The proportion of kilocalories for ultra-processed foods was derived by dividing the kilocalories obtained from foods classified as ultra-processed from the total kilocalories purchased for each household in the panel based on the NOVA classification provided by Monteiro et al. (2016), Vandevijvere et al. (2019) and Rauber et al. (2019).

- Fruit and vegetables: For this study, the kilocalories from fruits and vegetables as a proportion of all kilocalories purchased by a household was used for this outcome. This definition included fresh and canned fruits and vegetables. Fruits and vegetables that were composite parts of other foods, such as ready meals, were not included.

- Dietary diversity: In this study, the Berry index or diversity measure of evenness, weighted by the health index (Drescher et al, 2007; Kuczmarsaki et al, 2019); adapted from the UK Eatwell Guidelines (PHE, 2016) proposed as a guideline for 'healthy eating', was used to investigate the association between migrant density and diet quality.

A detailed description of how these measures were operationalised or defined using the Kantar FMCG Panel dataset may be found in Appendix 5.

3.8.7 Other Measures

Other variables that could modify the relationship between migrant density (i.e. population composition as a characteristic of place) and the outcome measures noted a priori in the literature and that were available in the Kantar FMCG panel data provided were outlined in the DAG. These variables, which were adjusted for in the regression analyses, comprised individual, household and area characteristics.

Individual characteristics

1. Age of the main shopper: The age of the main shopper included in years - minimum age 19 years (continuous variable) but grouped into six categories of 19 – 30 years, 31 – 40 years, 41 – 50 years, 51 – 60 years, 61 – 70 years and 71+ years for the descriptive analysis.
2. Highest educational qualification: The highest educational qualification of the main household shopper, included six groups namely: degree or higher, higher education, 'A' level, GCSE or 'O' level, Other – unspecified and none.
3. Social grade: (categories of social grade): There were five categories of social grade included on the panel data: Class AB (higher/Intermediate), Class C1 (senior/junior managerial, administrative or professional occupations including clerical occupations), ClassC2 (skilled manual workers), Class D (unskilled manual workers) and Class E (low grade pensioners, casual/low grade workers and unemployed persons on state benefits).

Household characteristics:

4. Household income: The annual household income was classed into six groups of £10,000 ranging from £0 to £50,000 or more.
5. Presence of children: For the analyses, a categorical variable was derived to identify households with or without children i.e. (adults only).
6. The household size described the total number of persons in the household (continuous variable).
7. Ethnicity of the main household shopper: There were 18 ethnic categories including White British, White Irish, White – other background, Indian, Pakistani, Bangladeshi, Asian- other background, Mixed [White/Black]- Caribbean, African, Asian, Chinese, African, Caribbean, Other Black background and 'Other' Ethnic Group. For the analyses, this was recoded as "White British" and "Non-White British".
8. Tenure: The household tenure was described by four categories: 'owned outright', 'mortgaged', 'rented', 'other'.

Area/Neighbourhood characteristics:

9. Region: The ten UK administrative areas comprising London, Midlands, North East, Yorkshire, Lancashire, South England, Scotland, East England, Wales and West England and South West England were included as regions.
10. Area deprivation: The quintiles of area deprivation were based on the weighted scores from the UK adjusted deprivation index grouped into quintiles as a relative measure of deprivation.

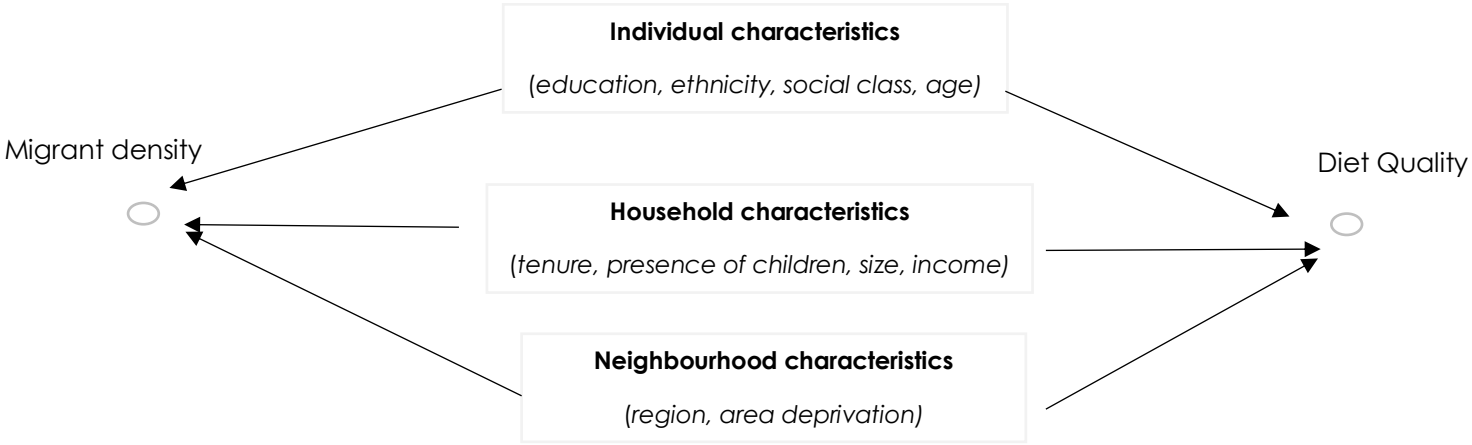
3.8.8 Diagrammatic relationship between migrant density and diet adequacy

Figure 3 is a directed acyclic graph (DAG) used to identify, define and visualise the relationship between variables (Tennant et al, 2021). Although the cross-sectional design precludes an examination of causality, it is presented as a tool for identifying potential confounders of the relationship between migrant density, which is a neighbourhood feature of place and household diet quality (Fleisher and Diez-Roux, 2008).

Figure 3 shows a simplified format including only the variables available to the study over three levels – area, household and individual (main shopper) characteristics. However, the reality is more complex as presented in Figure 4 and includes a range of variables at different levels (neighbourhood, household, individual) that may directly or indirectly influence features of place (of residence) including the physical/geographical (e.g. region, housing stock/tenure),

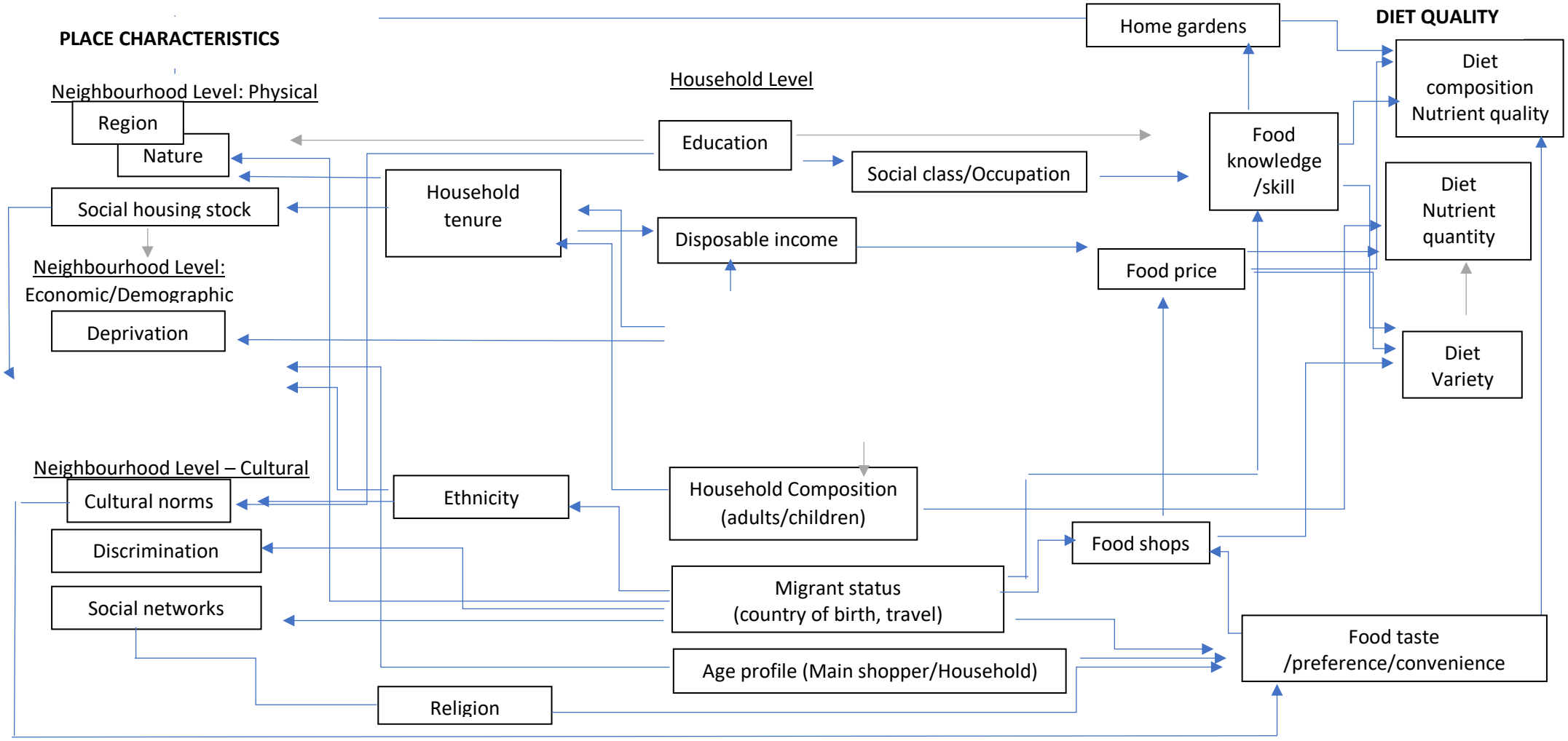
sociodemographic and cultural characteristics, that are also associated with patterns of food choice and expenditure measured in this study as diet quality (i.e. such that a change in any of these characteristics could affect the independent association between the exposure and the outcome if it is unadjusted). This shows a complex network of 'reciprocal relations between features of the neighbourhoods and their residents', which cannot be presented simply using DAGs and may require more complex approaches such as agent-based models (Fleisher & Diez-Roux, 2008: pg. 846) or a complex systems approach (Castellani et al., 2015).

Figure 3. DAG for migrant density and diet quality (simplified



Source: Kantar FMCG 2012 Panel (available variables)

Figure 4. DAG for migrant density and food quality (network version)



Source: Author's own

3.8.9 Quantitative Data Analysis

The independent association between migrant density and the diet quality of household food purchases was examined using descriptive statistics and linear regression via univariate and multivariate models.

The descriptive statistics were used to provide an overview of the data distribution; the univariate models were used to confirm the association between the exposure variable and each of the outcome variables and potential confounders.

The multivariable models (i.e. adjusted linear regression models) were used to determine the independent association between the exposure i.e., migrant density of the postcode district and diet quality as measured by the different outcomes. The adjusted models were built separately for the individual/household, and neighbourhood variables and then combined to form the final model, presented in the results. The data manipulation, linkage and cleaning were conducted using SPSS v 22 and Stata16, Stata17. All descriptive and regression analyses were conducted using Stata 16 -17 (StataCorp, 2019).

3.9 References

Abbafati, C., Abbas, K. M., Abbasi-Kangevari, M., Abd-Allah, F., Abdelalim, A., Abdollahi, M., Abdollahpour, I., Abegaz, K. H., Abolhassani, H., Aboyans, V., Abreu, L. G., Abrigo, M. R. M., Abualhasan, A., Abu-Raddad, L. J., Abushouk, A. I., Adabi, M., Adekanmbi, V., Adeoye, A. M., Adetokunboh, O. O., … Murray, C. J. L. (2020). Global burden of 87 risk factors in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet*, 396(10258). https://doi.org/10.1016/S0140-6736(20)30752-2

Abel, G.A., Barclay, M.E., & Payne, R.A. (2016). Adjusted indices of multiple deprivation to enable comparisons within and between constituent countries of the UK including an illustration using mortality rate. *BMJ Open* https://bmjopen.bmj.com/content/6/11/e012750

Abbots, E.-J. (2017). Approaches to Food and Migration: Rootedness, Being and Belonging. In: J.A. Klein and J.L. Watson (eds.). *The Handbook of Food and Anthropology*. https://doi.org/10.5040/9781474298407.0013

Abimbola, S. (2019). The foreign gaze: authorship in academic global health. *BMJ Global Health*, *4*(5), e002068.

Abraido-Lanza, A.F, Echeverria, S.E., Florez, K.R. (2016). Latino immigrants, acculturation, and health: Promising new directions in research. *Annual Review of Public Health*. 37:219 - 236

Adams, J., & White, M. (2015). Characterisation of UK diets according to degree of food processing and associations with socio-demographics and obesity: Cross-sectional analysis of UK National Diet and Nutrition Survey (2008-12). *International Journal of Behavioral Nutrition and Physical Activity*, 12(1), 1-12. https://doi.org/10.1186/s12966-015-0317-y

Afshin, A., Sur, P. J., Fay, K. A., Cornaby, L., Ferrara, G., Salama, J. S., Mullany, E. C., Abate, K. H., Abbafati, C., Abebe, Z., Afarideh, M., Aggarwal, A., Agrawal, S., Akinyemiju, T., Alahdab, F., Bacha, U., Bachman, V. F., Badali, H., Badawi, A., … Murray, C. J. L. (2019). Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*, 393(10184). https://doi.org/10.1016/S0140-6736(19)30041-8

Alidu, L., & Grunfeld, E. A. (2018). A systematic review of acculturation, obesity and health behaviours among migrants to high-income countries. *Psychology and Health*. https://doi.org/10.1080/08870446.2017.1398327

Alkerwi, A. A. A., Vernier, C., Sauvageot, N., Crichton, G. E., & Elias, M. F. (2015). Demographic and socioeconomic disparity in nutrition: Application of a novel Correlated Component Regression approach. *BMJ Open*, 5(5). https://doi.org/10.1136/bmjopen-2014-006814

Andreeva, V. A., & Unger, J. B. (2014). Host society acculturation and health practices and outcomes in the United States: Public health policy and research implications worldwide. *Journal of Public Health Policy,* 35(3), 278–291. https://doi.org/10.1057/jphp.2014.9

Baker, P., & Friel, S. (2014). Processed foods and the nutrition transition. *Obesity Reviews*. 15(7), 564-577

Bailey, M., Cao, R., Kuchler, T., Stroebel, J., & Wong, A. (2018). Social Connectedness: Measurement, Determinants, and Effects. *The Journal of Economic Perspectives*, 32(3), 259–280. https://doi.org/http://dx.doi.org/10.1257/jep.32.3.259

Bambara C., Smith, K.E. and Pearce, J., (2019). The politics of health and place. *Social Science and Medicine*, 232, 36-42

Bécares, L., Shaw, R., Nazroo, J., Stafford, M., Albor, C., Atkin, K., Kiernan, K., Wilkinson, R., & Pickett, K. (2012). Ethnic density effects on physical morbidity, mortality, and health behaviors: A systematic review of the literature. *American Journal of Public Health*, 102(12), 33–66. https://doi.org/10.2105/AJPH.2012.300832

Bechthold, A., Boeing, H., Schwedhelm, C., Hoffmann, G., Knüppel, S., Iqbal, K., De Henauw, S., Michels, N., Devleesschauwer, B., Schlesinger, S., & Schwingshackl, L. (2019). Food groups and risk of coronary heart disease, stroke and heart failure: A systematic review and dose-response meta-analysis of prospective studies. *Critical Reviews in Food Science and Nutrition,* 59 (7), 1071-1090 https://doi.org/10.1080/10408398.2017.1392288

Bell, D., & Valentine, G. (1997). *Consuming Geographies: We Are Where We Eat*. London, Routledge

Berger, N., Cummins, S., Smith, R. & Cornelsen, L. (2019). Recent trends in energy and nutrient content of take- home food and beverage purchases in Great Britain: an analysis of 225 million food and beverage purchases over 6 years. *BMJ Nutrition Prevention and Health*, 2, 63–71. doi:10.1136/bmjnph-2019-000036

Bessiere, J. & Tibere, L. (2013). Traditional food and tourism: French tourist experience and food heritage in rural spaces. *Journal of the Science of Food and Agriculture*, 93(4): 3420 - 3425

Beardsworth, A., & Bryman, A. (1999). Meat consumption and vegetarianism among young adults in the UK: An empirical study. *British Food Journal*, 101(4), 289-300 https://doi.org/10.1108/00070709910272169

Billson, H., Pryer, J. A., & Nichols, R. (1999). Variation in fruit and vegetable consumption among adults in Britain. An analysis from the dietary and nutritional survey of British adults. *European Journal of Clinical Nutrition*, 53(12), 946-952 https://doi.org/10.1038/sj.ejcn.1600877

Boeing, H., Bechthold, A., Bub, A., Ellinger, S., Haller, D., Kroke, A., Leschik-Bonnet, E., Müller, M. J., Oberritter, H., Schulze, M., Stehle, P., & Watzl, B. (2012). Critical review: Vegetables and fruit in the prevention of chronic diseases. *European Journal of Nutrition*, 51(6),637-663. https://doi.org/10.1007/s00394-012-0380-y

Brannen J (2005). Mixed methods research – a discussion paper. *ESRC National Centre for Research Methods. NCRM Methods Review Papers*. NCRM/005 https://eprints.ncrm.ac.uk/id/eprint/89/1/MethodsReviewPaperNCRM-005.pdf

Bryman, A. (2007). Barriers to Integrating Quantitative and Qualitative Research. *Journal of Mixed Methods Research,* 1(1), 8-22. https://doi.org/10.1177/2345678906290531

Buch, T., Hamann, S., Niebuhr, A., & Rossen, A. (2017). How to woo the smart ones? Evaluating the determinants that particularly attract highly qualified people to cities. *Journal of Urban Affairs,* 39(6). https://doi.org/10.1080/07352166.2017.1282765

Çaglar, A., & Glick Schiller, N. (2018). *Migrants and City-making: Dispossession, Displacement, and Urban Regeneration*. Duke University Press. https://doi.org/10.1215/9780822372011

Caillavet, F., Darmon, N., Létoile, F., & Nichèle, V. (2019). Four decades of household food purchases: Changes in inequalities of nutritional quality in France, 1971-2010. *Economie et Statistique,* 513, 69–89. https://doi.org/10.24187/ECOSTAT.2019.513.2003

Cannuscio, C. C., Hillier, A., Karpyn, A., & Glanz, K. (2014). The social dynamics of healthy food shopping and store choice in an urban environment. *Social Science and Medicine*, 122,13–20. https://doi.org/10.1016/j.socscimed.2014.10.005

Castellani B., Rajaram, R., Buckwalter, J.G. et al. (2015). *Place and Health as Complex Systems. A Case-Study and Empirical Test*. Springer. New York

Cobb, LK, Appel LJ, Franco M, Jones-Smith JC, Nur A, Anderson CAM (2015). The relationship of the local food environment with obesity: a systematic review of methods, study quality and results. *Obesity,* 23(7),1331 – 1344

Collins, K. M., Onwuegbuzie, A. J., & Johnson, R. B. (2012). Securing a place at the table: A review and extension of legitimation criteria for the conduct of mixed research. *American Behavioral Scientist*, *56*(6), 849-865.

Conklin A.I., Monsivais P., Khew K-T., Wareham N.J., Fououhi N.G. (2016). Dietary diversity, dietary cost, and incidence of type 2 diabetes in the United Kingdom: A Prospective Cohort Study. *PLoS Medicine*, 13(7), e1002085 https://doi.org/10.1371/journal.pmed.1002085

Cresswell, T. (2010). Towards a politics of mobility. *Environment and planning D: society and space*, *28*(1), 17-31.

Cummins S., Sally Macintyre (2006). Food environments and obesity—neighbourhood or nation? *International Journal of Epidemiology*, 35(1),100 -104. https://doi.org/10.1093/ije/dyi276

Cummins, S., Curtis, S., Diez-Roux, A., MacIntyre, S. (2007). Understanding and representing 'place' in health research: a relational approach. *Social Science & Medicine*. 65(9),1825 -1836

Davies, E.D., Hayden, S. (2002) Changing consumer demand creates opportunities for US Food System. *Food Review* 25(1),19 – 25

Demangeot, C., Broderick, A.J., & Craig, C.S. (2015). Multicultural marketplaces: new territory for international marketing and consumer research. *International Marketing Review*, 32 (2),118-140

Drescher, L.S., Thiele, S., Mensink, G.B.M. (2017) A new index to measure healthy food diversity better reflects a healthy diet than traditional measures. *Journal of Nutrition*,137, 647–51.

Emmons, K. M., Barbeau, E. M., Gutheil, C., Stryker, J. E., & Stoddard, A. M. (2007). Social influences, social context, and health behaviors among working-class, multi-ethnic adults. *Health Education and Behavior,* 34(2), 315–334. https://doi.org/10.1177/1090198106288011

Emerson, S.D., & Carbet, N.S. (2018). Obesity and regional immigrant density. *Journal of Immigrant and Minority Health,* 20 (5),1298 - 1302

Fernando, R., Massey, D.S. (2012). Pathways to El Norte: Origins, destinations and characteristics of Mexican migrants to the United States. *The International Migration Review*. – 46(1):3-36

Fleischer, N., L. & Roux, A., V., D. (2008). Using directed acyclic graphs to guide analyses of neighbourhood health effects: an introduction. *Journal of Epidemiology & Community Health,* 62 (9),842-846

Fox, J. E., & Jones, D. (2013). Migration, everyday life and the ethnicity bias. *Ethnicities*, *13*(4), 385–400. https://doi.org/10.1177/1468796813483727

Fox, M., Thayer, Z. M., & Wadhwa, P. D. (2017). Acculturation and Health: The Moderating Role of Sociocultural Context. *American Anthropologist*, 119(3). https://doi.org/10.1111/aman.12867

Frost, W. (2002). Migrants and Technological Transfer: Chinese Farming in Australia, 1850–1920. *Australian Economic History Review*, 42(2). https://doi.org/10.1111/1467-8446.t01-1-00007

Gao, X., Engeda, J., Moore, L. V., Auchincloss, A. H., Moore, K., & Mujahid, M. S. (2022). Longitudinal associations between objective and perceived healthy food environment and diet: The Multi-Ethnic Study of Atherosclerosis. *Social Science & Medicine*, *292*, 114542. https://doi.org/10.1016/j.socscimed.2021.114542

Gerodetti, N., & Foster, S. (2016). "Growing foods from home": food production, migrants and the changing cultural landscapes of gardens and allotments. *Landscape Research*, 41(7), 808–819. https://doi.org/10.1080/01426397.2015.1074169

Gichunge, C., & Kidwaro, F. (2014). Utamu waAfrika (the sweet taste of Africa): The vegetable garden as part of resettled African refugees' food environment. *Nutrition and Dietetics*, 71(4), 270 – 275 https://doi.org/10.1111/1747-0080.12143

Gittelsohn, J., & Sharma, S. (2009). Physical, consumer, and social aspects of measuring the food environment among diverse low-income populations. *American Journal of Preventive Medicine*, *36*(4), S161-S165.

Glick-Schiller, N., & Çağlar, A. (2013). Locating migrant pathways of economic emplacement: Thinking beyond the ethnic lens. *Ethnicities*, 13(4), 494–514. https://doi.org/10.1177/1468796813483733

Gómez, G., Kovalskys, I., Leme, A. C. B., Quesada, D., Rigotti, A., Cortés Sanabria, L. Y., Yépez García, M. C., Liria-Domínguez, M. R., Herrera-Cuenca, M., Fisberg, R. M., Previdelli, A. N., Guajardo, V., Ferrari, G., Fisberg, M., & Brenes, J. C. (2021). Socioeconomic status impact on diet quality and body mass index in eight Latin American countries: ELANS study results. *Nutrients,* 13(7). https://doi.org/10.3390/nu13072404

Greene, J. C., Kreider, H., & Mayer, E. (2005). Combining qualitative and quantitative methods in social inquiry. *Research Methods in the Social Sciences*, *1*, 275-282.

Green, C.A., Duan, N., Gibbons, R.D., Hoagwood, K.E., Palinkas, L.A., Wisdom, J.P. (2015). Approaches to Mixed Methods Dissemination and Implementation Research: Methods, Strengths, Caveats, and Opportunities. *Administrative Policy and Mental Health*, 42(5), 508-23.

Goodman, M. K., Goodman, D., & Redclift, M. (2009). Situating consumption, space and place. *Environment, Politics and Development Working Paper Series. London: Department of Geography, King's College London*.

Hasnain S., Ingram J. & Zurek, M. (2020). *Mapping the UK Food System – A Report for the UKRI Transforming UK Food Systems Programme, Environmental Change Institute*. United Kingdom. (accessed https://policycommons.net/artifacts/1713375/mapping-the-uk-food-system/2445009/ accessed August 2023)

Harvey, M., McMeekin, A., Randles, S., Southerton, D., Tether, B. & Warde, A. (2001). Between demand and consumption: a framework for research*. CRIC Discussion Paper 40* - accessed 24th January 2022)

Heale, R., & Twycross, A. (2018). What is a case study? *Evidence-based Nursing*, *21*(1), 7-8.

Holmes, C. E. (2021). Standing out and blending in: Contact-based research, ethics, and positionality. *Political Science & Politics*, *54*(3), 443-447.

Imamura, F., Micha, R., Khatibzadeh, S., Fahimi, S., Shi, P., Powles, J., & Mozaffarian, D. (2015). Dietary quality among men and women in 187 countries in 1990 and 2010: A systematic assessment*. The Lancet Global Health*, 3(3), e132 - e142 https://doi.org/10.1016/S2214-109X(14)70381-X

INFUSE (accessed April 2020): Office for National Statistics: National Records of Scotland; Northern Ireland Statistics and Research Agency (2017): 2011 Census aggregate data. UK Data Service (Edition: February 2017). DOI: http://dx.doi.org/10.5257/census/aggregate-2011-2. This information is licensed under the terms of the Open Government Licence [http://www.nationalarchives.gov.uk/doc/open-government-licence/version/2]

UK Government (2021). The English Index of Multiple Deprivation https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/835115/IoD2019_Statistical_Release.pdf

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*, 33(7), 14-26. https://doi.org/10.3102/0013189X033007014

Kamphuis, C. B. M., Giskes, K., de Bruijn, G.-J., Wendel-Vos, W., Brug, J., & van Lenthe, F. J. (2006). Environmental determinants of fruit and vegetable consumption among adults: a systematic review. *The British Journal of Nutrition*, 96(4)., 620- 635 https://doi.org/10.1079/BJN20061896

Kawachi, I., & Berkman, L., F. (2003). Introduction. In. I. Kawachi and L.F. Berkman (eds). *Neighbourhoods and Health*. Oxford. Oxford University Press

Koksal, M. H. (2019). Food choice motives for consumers in Lebanon: a descriptive study. *British Food Journal*, 121(11), 2607 – 2619 https://doi.org/10.1108/BFJ-09-2018-0580

Kuczmarski, M. F., Brewer, B. C., Rawal, R., Pohlig, R. T., Zonderman, A. B., & Evans, M. K. (2019). Aspects of dietary diversity differ in their association with atherosclerotic cardiovascular risk in a racially diverse us adult population. *Nutrients*, 11(5). https://doi.org/10.3390/nu11051034

Lam, M. C. L., & Adams, J. (2017). Association between home food preparation skills and behaviour, and consumption of ultra-processed foods: Cross-sectional analysis of the UK National Diet and nutrition survey (2008-2009). *International Journal of Behavioral Nutrition and Physical Activity,* 14(1). https://doi.org/10.1186/s12966-017-0524-9

Lefebvre, H. (1991). *The Production of Space* (translated by D. Nicholson-Smith). Malden: Blackwell Publishing

Lim, C. G., & van Dam, R. M. (2020). Attitudes and beliefs regarding food in a multi-ethnic Asian population and their association with socio-demographic variables and healthy eating intentions. *Appetite*, *144*, 104461. https://doi.org/10.1016/j.appet.2019.104461

Lopez-Class, M., Castro, F. G., & Ramirez, A. G. (2011). Conceptions of acculturation: A review and statement of critical issues. *Social Science & Medicine*, *72*(9), 1555-1562.

Mackenbach, J.D., Dijkstra, S.C., Beulens, J.W.J, Jacob, S.C., Snijder, M.B., Stronks, K., Monsivais, P., & Nicolaou, M. (2019). Socioeconomic and ethnic differences in the relation between dietary costs and dietary quality. *Nutrition Journal* 18(21), https://doi.org/10.1186/s12937-019-0445-3

Mak, T. N., Prynne, C. J., Cole, D., Fitt, E., Bates, B., & Stephen, A. M. (2013). Patterns of sociodemographic and food practice characteristics in relation to fruit and vegetable consumption in children: Results from the UK National Diet and Nutrition Survey Rolling Programme (2008-2010). *Public Health Nutrition*, 16(11),1912 – 1923 https://doi.org/10.1017/S1368980013001912

Marino, M., Puppo, F., Del Bo', C., Vinelli, V., Riso, P., Porrini, M., & Martini, D. (2021). A systematic review of worldwide consumption of ultra-processed foods: Findings and criticisms. *Nutrients* 13(8),2778 https://doi.org/10.3390/nu13082778

Massey, D., (2005). *For Space*. Sage. London, California, New Delhi.

MacKian, S., Elliott, H., Busby, H., & Popay, J. (2003). "Everywhere and nowhere": Locating and understanding the "new" public health. *Health and Place*, *9*(3), 219-229 https://doi.org/10.1016/S1353-8292(02)00054-0

Mohd-Any, A. A., Mahdzan, N. S., & Cher, C. S. (2014). Food choice motives of different ethnics and the foodies segment in Kuala Lumpur. *British Food Journal*, 116(12), 1879-1896https://doi.org/10.1108/BFJ-07-2013-0170

Mozaffarian, D., Fahimi, S., Singh, G.M., Micha, R., Khatibzadeh, S., Engell, R.E., Lim, S., Danaei, G., Ezzati, M., Powles, J. (2014). Global Burden of Diseases Nutrition and Chronic Diseases Expert Group. Global sodium consumption and death from cardiovascular causes. *New England Journal of Medicine,* 371(7):624-34. doi: 10.1056/NEJMoa1304127. PMID: 25119608.

Mozaffarian, D., Angell, S. Y., Lang, T., & Rivera, J. A. (2018). Role of government policy in nutrition-barriers to and opportunities for healthier eating. *British Medical Journal* (Online). https://doi.org/10.1136/bmj.k2426

Nicklas, T. A. (2009). Nutrient profiling: The new environment. *Journal of the American College of Nutrition*, 28(4), 416S-420S https://doi.org/10.1080/07315724.2009.10718105

Niedomysl, T. (2008). Residential preferences for interregional migration in Sweden: Demographic, socioeconomic, and geographical determinants. Environment and Planning A, 40(5). https://doi.org/10.1068/a39177

Oakes, J.M (2006). Commentary: Advancing neighbourhood-effects research – selection, inferential support and structural confounding. *International Journal of Epidemiology*. 35, 643-47. doi:10.1093/ije/dyl054

Olshansky, E., Sacco, D., Braxter, B., Dodge, P., Hughes, E., Ondeck, M., Stubbs M.L, & Upvall, M. J. (2005). Participatory action research to understand and reduce health disparities. *Nursing Outlook*, *53*(3), 121-126.

Osypuk ,T.L. & Galea, S. (2007). What level macro? Choosing appropriate levels to show place influences in population health In: S. Galea (ed.) Macrosocial Determinants of Population Health. Springer. New York. pages 399-435

Osypuk, T. L., Diez Roux, A. V., Hadley, C., & Kandula, N. R. (2009). Are immigrant enclaves healthy places to live? The Multi-ethnic Study of Atherosclerosis. *Social Science and Medicine*, 69(1), 110 – 120 https://doi.org/10.1016/j.socscimed.2009.04.010

Osypuk, T.L. & Avecedo-Garcia, D. (2010). Beyond individual neighbourhoods: A geography of opportunity perspective for understanding racial/ethnic health disparities. *Health and Place,* 16(6),1113-1123

ONS 2014. 2011 Census Analysis: Ethnicity and the labour market, England and Wales (Archived). https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/ethnicity/articles/ethnicityandthelabourmarket2011censusenglandandwales/2014-11-13#differences-in-labour-market-participation-by-gender (accessed March 2022).

Parham, S. (2013). *Market place: Food quarters, design and urban renewal in London*. Cambridge, Scholars Publishing.

Park, K. (2017). Ethnic foodscapes: foreign cuisines in the United States. *Food, Culture and Society*. 20(30):365-93

Penloza, L. (2007). Mainstreet USA revisited*. International Journal of Sociology and Social Policy*. 27 (5/6): 234-249. doi: 10.11081044333071075726 7

Phillips, D., & Robinson, D. (2015). Reflections on migration, community, and place. *Population, Space and Place*, *21*(5), 409-420.

Pinho-Gomes, A. C., Kaur, A., Scarborough, P., & Rayner, M. (2021). Are the eatwell guide and nutrient profiling models consistent in the UK? *Nutrients*, 13(8), 2732 https://doi.org/10.3390/nu13082732

Popay, J., Williams, G., Thomas, C., & Gatrell, T. (1998). Theorising inequalities in health: The place of lay knowledge. *Sociology of Health and Illness*, *20*(5). https://doi.org/10.1111/1467-9566.00122

Portes, A. (2010). Migration and social change: Some conceptual reflections. *Journal of Ethnic and Migration Studies*, *36*(10), 1537-1563.

Public Health England (PHE, 2016). *From Plate to Guide: What, why and how for the Eatwell Model* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/579388/eatwell_model_guide_report.pdf (accessed March 2022)

Public Health Scotland. Census lookups. Geographical. Population and Deprivation Team (formerly Information Services Division, Scotland): Population Census https://www.isdscotland.org/Products-and-Services/GPD-Support/Population/Census/ (accessed March 2020).

Quirmbach,D., Cornelson, L., Jebb, S.A., Marteau ,T., Smith, R. (2018). Effect of increasing the price of sugar-sweetened beverages on alcoholic beverage purchases: an economic analysis of sales data. Journal of Epidemiology and Community Health. 72 (4), 324-330

Rauber, F., Chang, K., Vamos, E. P., da Costa Louzada, M. L., Monteiro, C. A., Millett, C., & Levy, R. B. (2021). Ultra-processed food consumption and risk of obesity: a prospective cohort study of UK Biobank. *European Journal of Nutrition*, 60(4), 2169 – 2180 https://doi.org/10.1007/s00394-020-02367-1

Ray, K.N. & Miller, E. (2017). Strengthening stakeholder-engaged research and research on stakeholder engagement. *Journal of Comparative Effectiveness Research*, 6(4), 375-389. doi: 10.2217/cer-2016-0096.

Rehm, C. D., Peñalvo, J. L., Afshin, A., & Mozaffarian, D. (2016). Dietary intake among US Adults, 1999-2012. *Journal of the American Medical Association*, 315(23), 2542-2553.

Riosmena, F. & Massey, D.S. (2012). Pathways to El Norte: Origins, destinations and characteristics of Mexican migrants to the United States. *International Migration Review*, 46(1), 3-36

Stake, R.E. (2006). *Multiple Case Study Analysis*. London, Guildford Press.

Satia-Abouta, J., Patterson, R. E., Neuhouser, M. L., & Elder, J. (2002). Dietary acculturation: applications to nutrition research and dietetics. *Journal of the American Dietetic Association*, *102*(8), 1105-1118.

Schwingshackl, L., Hoffmann, G., Lampousi, A.M. (2017). Food groups and risk of type 2 diabetes mellitus: a systematic review and meta-analysis of prospective studies. *European Journal of Epidemiology* 32, 363–375. https://doi.org/10.1007/s10654-017-0246-y

Senauer, B. (2001) The food consumer in the 21st century: new research perspectives. *Working Discussion Paper* 01-03: Agric Economics /Research in Agricultural and Applied Economics

Sheller, M., & Urry, J. (2006). The New Mobilities Paradigm. *Environment and Planning A: Economy and Space*, 38(2), 207-226. https://doi.org/10.1068/a37268

Sheller, M. (2017). From spatial turn to mobilities turn. *Current Sociology*, *65*(4), 623-639. https://doi.org/10.1177/0011392117697463

Shi, L., Zhang, D., Rajbhandari-Thapa J. (2019). Neighborhood immigrant density and population health among native born Americans. *Preventive Medicine*. 127.10579 https://doi.org/10.1016/j.ypmed.2019.105792

Smith, G. D., Chaturvedi, N., Harding, S., Nazroo, J., & Williams, R. (2000). Ethnic inequalities in health: A review of UK epidemiological evidence. *Critical Public Health*, 10(4), 404–408. https://doi.org/10.1080/09581590010005331

StataCorp. 2019. Stata Statistical Software: Release 16. College Station, TX: StataCorp LLC

Story, M., Kaphingst, K. M., Robinson-O'Brien, R., & Glanz, K. (2008). Creating healthy food and eating environments: Policy and environmental approaches. *Annual Review of Public Health*, 29, 253–272. https://doi.org/10.1146/annurev.publhealth.29.020907.090926

Sonnino, R. (2016). The new geography of food security: exploring the potential of urban food strategies. *The Geographical Journal*, *182*(2), 190-200.

Sonnino, R., Marsden, T., Moragues-Faus, A. (2016). Relationalities and convergences in food security narratives: towards a place-based approach. *Transactions of the Institute of British Geographers*, 41(4), 477 – 489

Song, H.Q. & Kim, J.H. (2022). Effects of history, location, size and ethnic enclaves and ethnic restaurants on authentic gastronomic experiences. *International Journal of Contemporary Hospital Management,* 34(9),3332-3352

Teddlie, C., & Tashakkori, A. (2011). Mixed methods research. *The Sage Handbook of Qualitative Research*, *4*(1), 285-300.

Te Morenga L. A., Howatson A. J., Jones R. M., Mann J. (2014) Dietary sugars and cardiometabolic risk: systematic review and meta-analyses of randomized controlled trials of the effects on blood pressure and lipids, *The American Journal of Clinical Nutrition*, 100(1), 65–79, https://doi.org/10.3945/ajcn.113.081521

Tirelli, C., & Martínez-Ruiz, M. P. (2014). Influences of product attributes on sojourners' food purchase decisions. *British Food Journal*, 116 (2), 251-271. https://doi.org/10.1108/BFJ-01-2012-0019

Tommarchi E., & Bianchini, F. (2022). A heritage inspired cultural mega even in a stigmatised city: Hull UK City of Culture 2017. *European Planning Studies*, 30 (3), 478-498

Wahlqvist, M. L. (2002). Asian migration to Australia: food and health consequences. *Asia Pacific Journal of Clinical Nutrition*, *11*, S562-S568.

Wilkins, C. H. (2018). Effective engagement requires trust and being trustworthy. *Medical Care*, *56*, S6-S8. doi: 10.1097/MLR.0000000000000953.

Wimmer, A. (2004). Does ethnicity matter? Everyday group formation in three Swiss immigrant neighbourhoods, *Ethnic and Racial Studies*, 27:1, 1-36, DOI: 10.1080/0141987032000147922

Wimmer, A. (2007). How (not) to Think about Ethnicity in Immigrant Societies. Toward a Boundary-Making Perspective. In *Concepts and Methods in Migration Research*. 7-38

White, K., and Borrell, L.N. (2011). Racial/ethnic residential segregation: framing the context of health risk and health disparities. Health & Place. 17 (2): 438 - 448

Zenk, S. N., Lachance, L. L., Schulz, A. J., Mentz, G., Kannan, S., & Ridella, W. (2009). Neighborhood retail food environment and fruit and vegetable intake in a multiethnic urban population. *American Journal of Health Promotion*, *23*(4), 255-264.

Chapter 4: Results: Qualitative Evidence Synthesis

Background (Journal article)

This chapter comprises the qualitative evidence synthesis to explore the host experience of ethnic foods. The evidence synthesis used a thematic analysis to review qualitative peer reviewed journal articles. It incorporated the complex definitions (of hosts and migrants) and contexts linked to the host experiences of ethnic foods to identify three interrelated themes. The review demonstrated the active role of geography, politics and agency of various actors in (re)producing patterns of ethnic food consumption by hosts; interactive relationships that confirmed Lefebvre (1991) and Massey's (2005) concepts of place. The review highlights the importance of understanding the social interactions in place for shaping public health policy.

The chapter is presented as a research style paper, prepared for submission and includes a cover sheet that outlines the contribution of other co-authors and my role as the lead author.

London School of Hygiene & Tropical Medicine
Keppel Street, London WC1E 7HT

T: +44 (0)20 7299 4646
F: +44 (0)20 7299 4656
www.lshtm.ac.uk

RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

SECTION A – Student Details

Student ID Number	1803241	**Title**	Miss
First Name(s)	Omotomilola		
Surname/Family Name	Ajetunmobi		
Thesis Title	The impact of migration on local UK food systems: opportunities and challenges for public health		
Primary Supervisor	Professor Matt Egan		

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

SECTION B – Paper already published

Where was the work published?	NA		
When was the work published?	NA		
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion	NA		
Have you retained the copyright for the work?*	Choose an item.	Was the work subject to academic peer review?	Choose an item.

*If yes, please attach evidence of retention. If no, or if the work is being included in its published format, please attach evidence of permission from the copyright holder (publisher or other author) to include this work.

SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	International Journal of Intercultural Relations
Please list the paper's authors in the intended authorship order:	Ajetunmobi OM, Pongotta S, Mbau R, Berger N, Marks D, and Egan M
Stage of publication	**Not yet submitted**

SECTION D – Multi-authored work

For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	I conceived the project through a gap in the literature, prepared the protocol and organised the validation of selected journal articles (liaising with co-authors PS and MR) under the supervision of my supervisors (DM, NS and ME). I made copies of and indexed all relevant articles, analysed with advice from the supervisory team (BN, DM, EM). I led the writing of the manuscript (first and subsequent drafts) including the design of the thematic maps. Critical feedback was provided by all the authors.

SECTION E

Student Signature	Omotomilola Ajetunmobi
Date	30.08.23

Supervisor Signature	Matt Egan
Date	30.08.23

Host acculturation and the experience of ethnic foods: A qualitative evidence synthesis

Authors: Ajetunmobi OM[1], Pongutta S[1], Mbau R[1], Berger N[1], Marks D[1], Egan M[1]

[1]London School of Hygiene and Tropical Medicine, Faculty of Public Health Policy,
15 – 17 Tavistock Place, London, WC1H 9SH, United Kingdom.

Authors

Omotomilola Ajetunmobi *(corresponding author)
London School of Hygiene and Tropical Medicine, Faculty of Public Health Policy,
15 – 17 Tavistock Place, London,
WC1H 9SH, United Kingdom.
Email: omotomilola.ajetunmobi@lshtm.ac.uk
Fax:
Telephone: 44

Suladda Pongutta
London School of Hygiene and Tropical Medicine, Faculty of Epidemiology and Population Health, London, United Kingdom
Email: suladda.pongutta@lshtm.ac.uk

Rahab Mbau
London School of Hygiene and Tropical Medicine, Faculty of Public Health Policy, London, United Kingdom
Email: rahab.mbau@lshtm.ac.uk

Nicolas Berger
London School of Hygiene and Tropical Medicine, Faculty of Public Health Policy, London, United Kingdom
Email: nicolas.berger@lshtm.ac.uk

Dalya Marks
London School of Hygiene and Tropical Medicine, Faculty of Public Health Policy, London, United Kingdom Email: dalya.marks@lsthm.ac.uk

Matt Egan
London School of Hygiene and Tropical Medicine, Faculty of Public Health Policy, London, United Kingdom.
Email: matt.egan@lshtm.ac.uk

Abstract

Migration plays a pivotal role in the diversification of food systems changing foods and consumer experiences that can influence health. The impact of dietary acculturation on migrants is well known, however little is known of the changing consumption patterns of their hosts. This qualitative review synthesised evidence of the experiences, views, attitudes and perceptions of host communities to ethnic food, including the contexts of consumption. A total of 14 peer reviewed journal articles, published in the English language were identified from five databases that included the reports of hosts, with a migrant population, as consumers of ethnic food; conference abstracts, reviews and studies that focused primarily on the experiences of the migrant were excluded. The participants ranged from one to 227 with observation across countries in Asia, the Americas and Europe. Based on the summary of the context – political, spatial, people and food product attributes–the review identified three inter-related themes: the commodification of ethnic food, emplacement of ethnic food and pedagogy of ethnic food. The host acculturation to ethnic food occurs within a context that includes processes, products and relationships which shape consumption. To develop interventions for equitable population health, a better understanding of the relational context of consumption including the complex role of culture in shaping practices is needed.

Introduction

Public health in a changing food system

Food is essential for life. Food brings people together, signifies belonging (and exclusions) and negotiates boundaries (Abbotts, 2016; Carrus et al., 2018; Galalea & Kipnis, 2020; Kershen, 2002; Kipnis et al, 2014). It expresses culture (Carrus et al., 2018) and through migration, can enable complex interactions that reinforce identities, foster livelihoods and expose inequalities in the production, distribution and consumption of food - including the adoption of (or resistance to) other and/or new foods (Cruz & Buchanan-Oliver, 2015; Kershen, 2002). Furthermore, the growing diversity of cultural food products and services have expanded the scope and interaction in both physical and virtual marketplaces (Demangeout et al., 2015; Ibarra-Cantu & Cheetham, 2021; Kershen,2002; Low & Ho, 2018; Lo, 2009, Glick-Schiller & Çağlar,2013 Parzer, et al, 2016; Penaloza & Gilly,1999; Panayi, 2008), creating consumers with complex identities, values and tastes (Galalea and Kipnis, 2021; Kipnis et al, 2014).

Sub-standard diets have considerable impact on diet-related health inequalities (Ashfin et al., 2017) driven by changes within the food system (Leeuwis et al., 2021; Swinburn et al, 2011). These impacts have focused public health efforts on consumers and their practices, however, strategies designed to modulate consumer behaviour have had limited impact; leading to calls for public health to integrate a better understanding of human behaviour by acting in the interstices between the human, natural, social, cultural and technological environments (Bambra et al., 2019; Lang & Rayner, 2012; Mozaffarian et al., 2018; Popay et al., 1998). A good understanding of how changing cultural and social networks (re)shape the food system will provide key insights for designing effective interventions (Carrus, 2018; Craig & Douglas, 2006; Kipnis et al., 2014; Luedicke, 2015), particularly pertinent in today's globalised world with increased (and speedy) movement of people, objects and ideas.

Migration offers an opportunity to examine food consumption, being the result of multiple interactions in the social, political, economic and cultural spheres, which produces a range of social transformations in places, individuals and their communities (Carrus et al., 2018; Castles, 2018; MacKain et al., 2003). Migration accounts for a shift in food preferences (Lusk and McCluskey 2018) a phenomenon that is well documented amongst migrants as dietary acculturation (Alidu & Grunfeld, 2018; Delavari et al., 2013; Fox et al., 2017; Satia-Abouta et al., 2002).

Dietary acculturation describes a fluid negotiation of transnational and or global identities (Luedicke, 2015); food access/security and consumption choices through a range of factors at different levels (Handley, 2013). These factors include the contexts - historical, spatial, temporal, political, cultural and relational - before, during and after migration (Abraido-Lanza et al., 2006; Castles, 2018; Fox et al., 2017); individual factors such as generation, gender, ethnicity, religion, socio-economic and migration status (Ayala et al., 2008; Brown et al, 2019, Satia-Abouta et al, 2002) and the global consumer culture (Dey et al., 2019).

Few studies have considered the impact of migration on the hosts that could provide important insights on consumption patterns in the wider population (Douglas and Craig, 1997; Andreeva & Unger, 2015). Hosts, who are defined in different ways by their place of birth, numerical size, legal rights, social status and access to social and economic resources (Urquia & Gagnon, 2011) are also described as 'receiver', 'majority', 'native', 'mainstream', 'local' or 'dominant' and may comprise ethnically homogenous or heterogenous populations (Bourhis et al., 2010; Fox et al., 2017). Host acculturation is also context specific (Andreeva & Unger, 2014) and reflects the underlying power dynamics that shape consumption practices in different places (Cranfield, 2013; Luedicke, 2015; Mascarello et al., 2020; Penaloza, 2007; Veresiu & Giesler,2018).

Ethnic food is an example of the growing cultural diffusion amongst hosts. In marketing, these foods are attributed to an ethnic, national, racial or cultural group - the 'subordinate other' (Ray, 2016 p1) - through their skill, knowledge or consumption (Ayyub, 2015; Zafari et al, 2015). They are also imagined products (Ashley et al., 2004; Cranfield, 2013) designed to match values, suit tastes, lifestyles (Leung, 2010; Mascerello et al., 2020) and provide cultural encounters (Bardhi et al., 2010; Wise, 2012). Through the process of globalisation, ethnic foods creatively transgress boundaries, become dispersed and even commonplace - forming part of the usual practice (Bardhi et al, 2010) - and are a highly profitable market (Ayyub, 2015; Kipnis et al, 2014; Paulson Box & Williamson,1990; Verbeke & Poqiviqui, 2005; Mintel, 2019).

Aims

This review aims to summarise and analyse evidence of the experiences, views, attitudes and perceptions of hosts to ethnic food including the contexts of consumption.

Methods

Study Design

A qualitative evidence review was conducted to explore the phenomenon of acculturation and experience of ethnic food consumption in the host population. Qualitative methods are best suited to address the aims of the study because they provide an 'in-depth' understanding of issues i.e. 'how 'and 'why' with meanings of 'attitudes, motives and behaviours' as attributed by individuals within 'their natural' or other specified contexts (Aspers & Corte, 2019; Korstens & Moser, 2017).

Qualitative evidence reviews provide the views of the user or other practitioners that can add insights to the understanding of a phenomenon, identify meaning or the mechanisms associated with a process by collating evidence from relevant studies (Grant and Booth, 2004). To identify relevant material and ensure transparency, a systematic approach was however taken in to literature searching, data extraction and assessment of the included studies (Grant and Booth 2004; Booth, 2009)

Search strategy and inclusion criteria

We searched five electronic databases - PROQUEST, MEDLINE, International Bibliography of the Social Sciences (IBSS), ISI Web of Science and the ABI/INFORM Global databases from inception until January 2021.

To be included, studies had to specify a host community i.e. non-migrant also referred as the 'receiver', 'local', 'majority', 'main', 'dominant', 'native' or 'indigenous' citizens (Urquia & Gagnon, 2011), which could be multicultural. In addition, the studies had to refer to a migrant population broadly described as 'those on the move' (Crawley & Skleparis, 2017) irrespective of the county of birth, origin or destination, legitimacy or reason for moving or length of stay, stage of migration, generational status, ethnicity or race (Urquia & Gagnon, 2011) – categories that may be overlapping (Crawley & Skleparis, 2017). While second or subsequent generations of migrants may be considered part of the host population (Andreeva & Unger, 2015), for this review the host or migrant was defined as described by the original author.

The phenomenon of interest was the consumption of ethnic food, described as a product that could be attributed to a region or ethnic group. It was appraised through the experiences, views, attitudes or perceptions of host communities reported in studies of a qualitative study design including ethnography, phenomenology, focus group discussions, observations and or in-depth interviews. The review's inclusion criteria are summarised in Table 1.

Only peer-reviewed studies that comprised qualitative methods, including mixed methods designs, published in the English language were included. There was no restriction on the country or regions of investigation. Conference abstracts, reviews and studies primarily focused on migrants were excluded.

The search strategy included citations of free text entries, plurals and synonyms for the following key words,: 'Ethnic', 'Consump*', 'Food', 'Diet', 'eat*', 'nutrition', mainstream', 'Dominant', 'Host', 'Receiver', 'native', 'national', 'Acculturat*', 'Reverse acculturation', adaptation', 'integration', 'assimilation' 'migrant', 'migra*', 'immigrant', 'immigra*', 'refugee', 'asylum seeker', 'attitude', 'experience'. Additional articles were obtained by hand-searching i.e. via snowballing relevant references from journal articles. All the citations were exported to a Reference Manager database [https://www.mendeley.com/reference-management/reference-manager].

Table 1: Inclusion Criteria using the SPIDER framework [Cooke, Smith and Booth, 2012]

Sample	Members of host communities
Phenomenon of Interest	(Consumption of) ethnic food
Design	Narrative, in-depth interviews, ethnography, case studies, observation
Evaluation	Experiences, attitudes
Research type	Qualitative /Mixed methods

Study selection, quality appraisal

The titles and abstracts were retrieved for selection and reviewed by the lead author (OA). A sample of the titles and abstracts and independently reviewed by a second author (SP), using the pre-defined study protocol for about 40% (n =793) of the retrieved articles in a blinded process. Where necessary, the study protocol was revised for clarity, and disagreements regarding the selection of articles were resolved in discussion with a third member of the team (ME).

Guided by the Joanna Briggs Institute Qualitative and Review Instrument (Aromataris et al., 2015), the lead author conducted a quality appraisal of all selected articles and separately by two other authors (SP, RM) who also independently appraised half of the included studies for quality (i.e. 7 articles each). The framework provided by the Joanna Briggs institute assessed the congruence of the research methods and the philosophical underpinnings, research questions, methods and analyses, the position of the researcher, the voice of the research subjects, ethical considerations and the study conclusions that assessors could agree to ('yes'), disagree ('No) or be undecided (maybe). Disagreements were resolved in discussion with a separate member of the team (ME).

Data extraction and synthesis

For each of the selected articles, the following fields of relevant information was extracted by the lead author (OA): author, year of publication, study aim, findings, location, setting, participants, study design, recruitment methods, definitions of host /migrant, food features and experience of consumption.

Each article was analysed inductively and coded to identify themes associated with the host's experience of ethnic food based on the interpretation within the original text with quotes extracted where relevant (first order constructs) as recommended by Thomas and Harden, 2018. This analysis was conducted independently by two of the authors (OA and ME) and the results discussed to agree emergent themes. Following the initial review and identification of themes, further comparative analysis of the studies (i.e. similarities and dissimilarities) was conducted to identify patterns of consumption by one author (OA)and used to create a theme map (Figure 2), which was revised following discussion with other authors (ME, DM, NB).

Results

Studies identified

A total of 3309 abstracts were identified (1840, excluding duplicates) including 55 articles retrieved via handsearching and Google searches. Of the 182 full text articles retrieved for further review, 25 were selected for quality assessment. Of these, one paper was rejected based on the quality appraisal (the study aims diverged from the methods of data collection), whilst a further 10 were rejected for not meeting the inclusion criteria on closer inspection. The final selection comprised 14 qualitative full text articles (Figure 1).

Overall, there was a high agreement (81%) between the assessors across the categories of quality appraisal. There was full agreement on the study conclusions for all the studies but less agreement on the ethical criteria or approval for individual studies between the assessors. For the ethnographic reports in particular, the ethical considerations were implied but not explicitly stated as would be expected in the medical sciences where participant consent is agreed and recorded prior to the commencement of the research. None of the studies were excluded because of this, following the argument by Parker (2007) that ethical consent in ethnographic research is a reflexive and dynamic practice, a product of trusting relationships that is (re)negotiated throughout the research process. No overall quality score was calculated and no further grading or assessment criteria were applied.

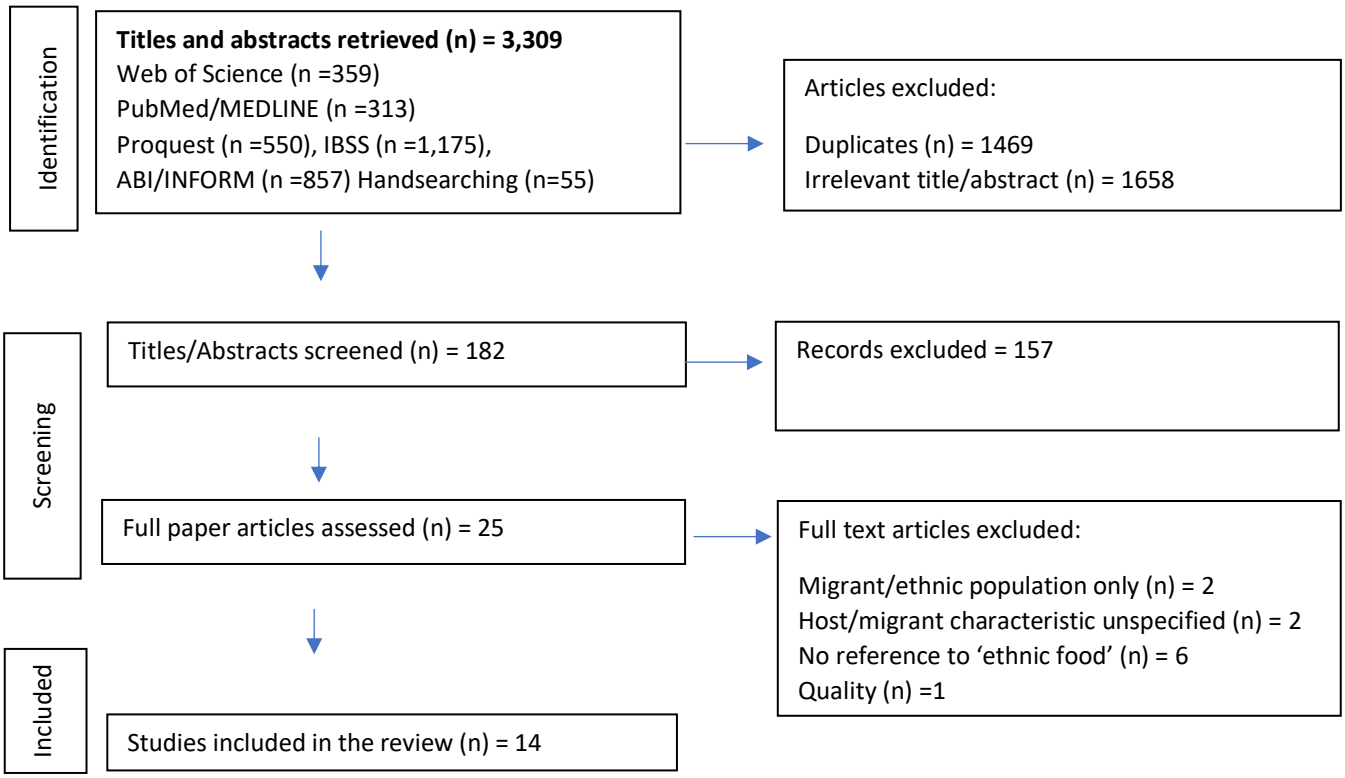


Figure 1: PRISMA Flowchart

Overview of selected studies

The studies varied by methods and outcomes examined (Table 2). Four studies were based on research conducted in the United Kingdom (Choudhary et al., 2019; Duruz, 2010; Jamal, 1996; White & Kokotsaki, 2004), two in Brazil (Oakdale, 2008; Ricke, 2018), two in Korea (Jo & Cha, 2019; Yang, 2010) and one each from Vietnam (Avieli, 2005), the United States of America (Chen et al., 2014), China (Wu, 2016), Yemen (Elie, 2014), Cyprus (Eluwole et al, 2019) and the United Arab Emirates (Demangeot & Sankaran, 2012). The number of study participants ranged from one to 227, mostly recruited using convenience methods. The study periods ranged from four months to about 10 years in settings that included festivals/cultural events, restaurants, schools, public spaces, ethnic/migrant enterprises, mainstream supermarkets, social media and individual homes. The range of ethnic food products comprised raw food ingredients, main meals, snacks, fast foods and stimulants e.g. qat.

The methods of analysis included ethnographic reports (Avieli, 2005; Duruz, 2010; Elie, 2014; Jo & Cha, 2019; Oakdale, 2008; Ricke, 2018; Wu, 2016; Yang, 2010), thematic analysis (Jamal, 1996; Chen et al., 2014; Choudhary et al.,2019; Eluwole et al., 2019), grounded theory (Demangeot & Sankaran, 2012) and value chain analyses (White & Kokotsaki, 2004). Two of the studies used a mixed

methods design (Chen et al., 2014; White & Kokotsaki, 2004). The definition of hosts comprised persons defined by the country of birth (Avieli, 2007; Duruz, 2010; Choudhary et al., 2019), citizenship (Demangeot & Sankaran, 2012; White & Kotasaki, 2004), ethnicity (Chen, 2014; Jamal, 2006) or normal residence (Elie,2014); as well as those described as indigenous (Oakdale, 2008) or a combination of ethnicity and country of birth (Yang, 2010).

There were also varying descriptions of the migrant communities characterised by the country of birth (Duruz, 2010; Eluwole et al., 2019; Jamal, 1996; Ricke, 2018; White & Kokotsaki, 2004; Yang, 2010), nationality, race/ethnicity or ancestry – including second/subsequent generation migrants (Avieli, 2005; Chen et al., 2014; Demangeot & Sankaran, 2012; Jo & Cha, 2019). Three studies also differentiated the population using local geographical boundaries i.e. rural/urban (Ricke, 2018; Wu, 2016) and island/mainland (Elie, 2014). Only one study noted details of the migrant's length of stay in the host setting (Choudhary et al., 2019).

Main themes

In this review three interrelated themes, linked to the experience and context of ethnic food consumption, were identified across different scales of influence:

Commodification of ethnic foods, describes how the experience of ethnic food was valued, negotiated, transformed and exchanged at different scales - local and individual.

Emplacement of ethnic food, describes the focal role of place in the host's experience of ethnic food.

Pedagogy of ethnic food, describes the host's acquisition of the knowledge, skills or taste for ethnic food.

Table 2: Overview of selected studies

Author (Year)	Location	Host (Migrant)	Aims	Design/ Data collection and Synthesis
Avieli (2007)	Hoi An, Vietnam	Vietnamese (Chinese - 3rd/4th generation/ Economic)	To explore the 'culinary' context of Chinese community festivals and the meanings ascribed to them by those who prepare them).	Ethnographic (1999- 2000, 2001,2004) Participant /Non-Participant observation and in-depth interviews with key stakeholders
Chen (2014)	California, USA	White American (Latino, Hmong - ethnicity)	To evaluate the impact of a short-term intervention to promote ethnic produce on the knowledge, attitude and behaviours among low income families that were eligible for free meals.	Mixed methods survey and focus group in quasi-experimental design. (February - May 2012). Survey questionnaire in 4 schools comprising students (n=227) and their parents (172 intervention/100 control/28 for focus group). Ethnically diverse comprising mainly Latino (50%) and White families and a small proportion of Native American and bi-ethnic students.

Author (Year)	Location	Host (Migrant)	Aims	Design/ Data collection and Synthesis
Choudary et al (2019)	Britain	British (British – Indian)/ Indian)	To explore whether social media, through information diffusion is able to influence consumer behaviour toward acculturation and sustainable consumption of food.	Cross sectional survey using semi-structured interviews conducted face to face and through online platforms. Purposive sampling of social media users (12 males/12 females); 8 persons from each ethnic group (British/British Indian/ Indian). Age range 21 - 66 years. Data synthesis was thematic.
Demangeot & Sankaran (2012)	Abu Dhabi and Dubai, UAE	20 UAE nationals (UAE residents - non-nationals: 80% of whom are migrants)	To explore the phenomenon of cultural pluralism and characterise the strategies that consumers living in multicultural environments might adopt	Qualitative in-depth sampling of participants (12 females and 8 males who had spent an average of 2.5 years in UAE) across the two cities over 8 months. Convenience and snowball sampling. Grounded theory analysis.
Duruz (2010)	North London, UK	NA (the host was also the migrant)	To explore the contexts of food and transnationalism through micro-narratives of Asian food.	Ethnographic (in-depth interview) of one person (convenience sample) who was born in the UK and spent his childhood and adolescence in Hong Kong. Thematic analyses

Author (Year)	Location	Host (Migrant)	Aims	Design/ Data collection and Synthesis
Elie (2014)	Soqotora Island	Islanders (mainlanders - Yemenis)	To explore the process, manifestation, cultural expression and transformation of the qat chewing culture	Ethnographic (10 years of intermittent fieldwork: 2002 - 2012). Observation, Participant/non-participant observation; interviews with Yemeni sellers, Soqotoran consumers and non-consumers. Thematic analyses.
Eluwole et al. (2019)	Famagusta (North Cyprus)	Cypriots (Other international migrants not specified)	To examine the impact of the international students' food culture on their host culture.	Focus group discussion comprising 17 natives of Famagusta (9 female) with 6+ years' experience of working with international students such as landlords, employers, university staff of international students and cab drivers. Thematic analyses

Author (Year)	Location	Host (Migrant)	Aims	Design/ Data collection and Synthesis
Jamal (1996)	Bradford, UK	White English (Pakistani)	To explore the way in which native British people negotiate the differences in the consumption of 'other' cultural goods and associate different symbolic meanings with their own actions and those of others.	Ethnographic. White English 22 persons /7 households (January 1995 - March 1996). Participatory and non-participant observation and in-depth interviews summarised using thematic analyses. Convenience sample - snowball
Jo & Cha (2019)	South Korea	South Koreans (Chinese)	To investigate the influence of Korean-Chinese on the development of the Korean food industry	In-depth interviews (snowball sampling) with 13 Chinese (n=1), Korean (n=8) and Korean-Chinese (n=4) residents and tourists to South Korea. Thematic analyses.
Oakdale (2008)	Amazonia, Brazil	Amazonians of the Kayabi indigenous group (White men - not otherwise specified)	To explore the privileged means for understanding the process of acculturation through contact from the account of two men	Ethnographic including in-depth interviews with two men. Historical narrative review

Author (Year)	Location	Host (Migrant)	Aims	Design/ Data collection and Synthesis
Ricke (2018)	Brazil	Brazilians (German or persons of German ancestry)	To examine the role that domestic ethnic tourism plays in the construction of middle-class identity in Brazil and the interaction of rural and urban residents in the process	Ethnographic (Observation and interviews – number not specified)
Wu (2016)	China	Rural Chinese (Urban Chinese)	To explore how rural dwellers rebranded their foods for urban consumers and evaluate how culture could be used to promote development.	Ethnographic study - 15 years of field work (Interviews and observation) of 'ethnic foods' marketing in China.
White & Kokosatki (2004)	England, UK	English (Indian residents)	To explore the attitudes towards, and the consumption of Indian foods	Cross sectional (structured) survey, laddering interviews and focus group discussions (12 English/12 Indian consumers). Snowball sampling. Hierarchical value maps
Yang, 2010	Korea	Koreans (Chinese)	To analyse people's perception and practices of wellbeing.	Ethnographic (including Interviews with Korean consumers - number not stated)

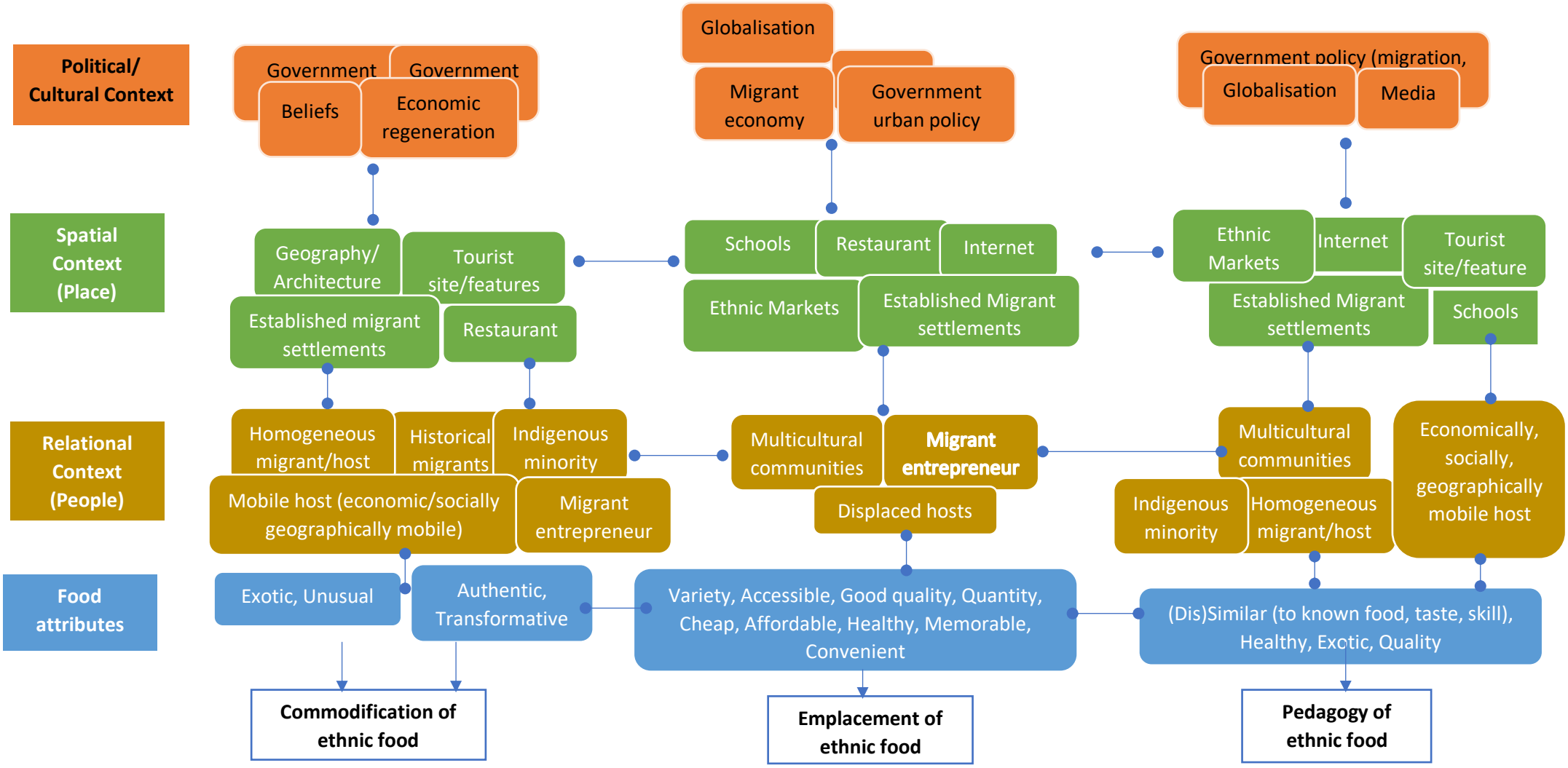


Figure 2: Theme map: host acculturation – experience of ethnic foods

Figure 2 is a map created from the thematic analysis. It outlines how interaction between different linked contexts - spatial (green bars), political/cultural (orange bars), relational (brown bars) and food product attributes (blue) - result in the varying experiences of ethnic food presented via the overarching themes.

It includes different levels at the macro/meso levels such as local or national government policies on immigration, urban planning, agriculture or the economy that interact with features at the micro-level e.g. the presence of migrants with a historical legacy and economically mobile hosts to produce unfamiliar experiences of festival food. Each of the themes were inter-dependant hence, the commodification of ethnic food included specific features of place that was associated with related modes of learning.

Commodification of ethnic foods

This theme presents the host's experience of ethnic food influenced by structural, institutional and other interests that seek to market cultural differences. The main feature of this theme is the tangible (i.e. economic) or intangible exchange, reflected in the interaction of various actors associated with the hosts' consumption of ethnic food including the meso (i.e. state, municipality or region) and micro (individuals) features.

Other studies, have noted the marketing and 'monetising' of cultural identity/knowledge as a distinct brand in a performance facilitated by various actors (Comaroff & Comaroff; 2009; Ray, 2016; Galalae & Kipnis, 2020). In this study, the state, migrant (producers) and host (consumers), selectively engaged in a cultural production of traditional or local artefacts for monetary gain (Chhabra et al., 2003); with the distinctive appeal of the 'Other' (hooks, 1992; Said, 2003) favourably positioned as a product in a competitive market (Kipnis et al., 2014; Veresiu & Giesler, 2018).

Four of the selected papers (Avieli, 2005; Jo & Cha 2018; Ricke, 2018; Wu, 2016) noted the interaction between direct investment by local, national (and international) agencies and the active involvement of migrant communities, as custodians of a cultural heritage or knowledge, in staging an authentic experience. Avieli's account of the Phuoc Kien festival in Hoi An, Vietnam, the annual ancestral celebration of Fukinese-Chinese migrant communities (third/fourth generation), was supported by the local 'doi moi' policy partly funded by UNESCO (Avieli, 2005). The festival food was presented as part of a programme of cultural activities including rituals that (re) produced the past for the Vietnamese hosts. Similarly, as a strategy for economic regeneration, regional or

national governments exploited the tourist potential of ethnicity (and ethnic foods) in the Festa Pomorena, developed by Brazil's Pomorede's municipality to celebrate its Germanic roots (Ricke, 2018), the Korean-Chinese 'Lamb skewer' street (Jo & Cha, 2018) and another UNESCO funded scheme to rebrand Chinese rural foods(*nongjaile*) for urban consumers (Wu, 2016).

The experience of ethnic food was shaped through meanings and symbols, which epitomised its 'unique' quality adapted to suit the needs of the context i.e. a cultural performance of an imagined time, space or people displaced from its original roots (Avieli, 2005; Chhabra et al., 2003; Gyimothy & Mykletun, 2009; Ricke, 2018). Hence, 'authenticity' of ethnic food could be created and adapted to the market i.e. for taste, edibility, sense of quality and distinctiveness (Zanoni, 2018).

These features were evident among the Vietnamese in the Phuoc Kien festival marked by the presentation of the Chinese ritual symbol of 'thrift and fertility' – the 'golden pig', roasted whole and glazed. Local Brazilian tourists enjoyed German breads, pigs knuckle and stuffed duck from recipes and skills handed down through generations of migrants that gave hosts a taste of "a European world, a little Europe" (Ricke, 2018) even if not wholly authentic, as a festival chef remarked:

> *"In Brazil, 150 years ago, after the Germans came, they brought knowledge about how to make kraut, ham…but had completely different products to cook with. Many traditional German dishes were lost but they did not want to lose the German way to eat …stuffed duck – they stopped doing it in Germany because of the strong taste but here they still do it…"* (Ricke, 2018; 290)

In this way, all actors exhibited power in shaping the experience of ethnic foods – governments/authorities through the structural/narrative or historical resources that framed the experience, migrants through their choice and speciality in the production and presentation and the hosts through their specification of demand –driven by the types of capital to be gained from the interaction (Jackson, 2002).

For the host, who demonstrated "uniqueness through consumption choices" (Ricke, 2018; Jo & Cha, 2018), ethnic foods was used to acquire or reinforce a distinct identity reminiscent of Bourdieu's theory of distinction, which attributes consumption practices to the interaction between types of capital and social class (de Morais Sato et al., 2016). A recent review of food studies applying Bourdieu's theory found different (food) values associated with status i.e. health, ethics, pleasure and socialisation (de Morais Sato et al., 2016). Eleven of the journal articles described how

consumers negotiated identity using ethnic food (Avieli, 2005; Elie, 2014; Choudhary et al., 2019; Duruz, 2010; Jamal, 2006; Jo & Cha, 2019; Oakdale, 2008; Ricke, 2018; Yang, 2010; White & Kokotsaki, 2004; Wu, 2016). Hosts employed economic, social and locational resources as part of their consumption experiences (Prazer et al., 2016; Cranfield, 2013), which were characterised as 'middle-class status' (Ricke,2018; Duruz, 2010) 'elite', 'urban' (Elie, 2014; Wu, 2016), 'educated', 'cosmopolitan' (Jamal, 2006; Choudhary et al., 2019) or 'adventurous' (White & Kotasaki, 2004).

Consumption of ethnic food was associated with cosmopolitan values, that valorised taste, cost, quantity, quality, access (Ricke, 2018; Duruz, 2010), particularly in areas with a high migrant density (Jamal, 2006):

> *"I think my generation is different. We do curries quite routinely. Particularly in Bradford, women of my age will quite often go out to curry houses and it's cheap and it's good value and they have got a taste for it ...sort of much more international palate - international taste and they will cook curries too... I mean if you are in a city that has a big Asian population, it's easier to do ... certainly someone like me ... sort of middle class ... and with some education and perhaps with a broader outlook on things like international food or whatever will quite routinely make curries and have a curry book in her house"* - White British consumer of Asian food *(Jamal, 2006:20 - emphasis added)*

Unlike Ricke's discussion of the Festa Pomorode, as a conscious performance of middle-class aspirations (Ricke, 2018); Duruz' (2010) ascribed the middle-class status of the lone subject of her study, to his own migrant exposure i.e. born in Britain, raised in Hong Kong, frequent traveller to Singapore.

In Elie's account of qat, the meaning, location and practice of consumption varied in association with the social status, location and age of the consumer. In the mainly male '*muqhib*', qat served as an expensive 'social lubricant' in private communal spaces amongst those with political aspirations. It was distinguished from the practices of Soqotoran youth whose desire to shed their inferior 'Bedouin' identity led to deviant consumption, in individual public booths that emerged to accommodate them (Elie, 2014, 8); and an evolution from the migrant Yemeni mainlanders who chewed (and traded) qat as '*fadhha*' - a stimulant - at work (Elie, 2014).

For the indigenous (minority) Brazilian in Oakdale's anthropological account, the prevailing belief system informed the transformative experience of ethnic foods. Indigenous food consumption was

an intimate activity associated with conviviality between tribes, able to change individuals and their relationships, the way weaning infants moved from the 'spirit' world to the human one. Non-indigenous foods (such as coffee, sugar, spaghetti and canned foods) were described as 'smelly - komi kasing' or 'unhealthy', linked to the loss of one's soul or independence (Oakdale, 2008; 798); indigenous people who ate and slept at [European - migrant] posts, became physically indistinguishable to their relatives (Oakdale, 2008).

In summary, the studies identified by this theme outlined the transactional value of ethnic foods consumed for its distinctive appeal and or potential to reinforce or transform - economic, social and cultural – realities in different contexts.

Emplacement of ethnic foods

The emplacement of ethnic food frames space as an important element in the host's experience. Place, described broadly as meaningful space (which is more abstract), is a complex and dynamic product of interactions (Harris, 2010). It could refer to the location of an activity or object, the site of transformation or the sense of identity created through everyday practices (Agnew, 2005).

Twelve of the studies framed place as a central feature in ethnic food consumption. These were spaces of production or consumption, symbolic, imagined or real, that conferred valued attributes on ethnic food and defined the resulting experience. It included geographical areas with a high density of migrants, restaurants, shops that sold ethnic produce and equipment managed by knowledgeable ethnic vendors or in mainstream settings (Avieli, 2005; Jo & Cha, 2019; Jamal, 1996; Ricke, 2018; White & Kokotsaki, 2004; Wu, 2016; Yang, 2010). It also included actual and or imagined 'spaces of encounters' through the senses i.e. sights, smells or taste (Duruz, 2010; Dermagout & Sankaran, 2012; Choudhary et al, 2019; Oakdale, 2008; Wu; 2016).

Cultural decorations or dress, historical artefacts or background music that created a sense of (Other) place in contrast to the host's usual practice, formed part of the experience of consuming ethnic food (Jamal, 1996; Avieli, 2005; Ricke,2018; White & Kokotsaki, 2004; Wu, 2016).

> *"I enjoy eating Asian curries. It's a different experience when you go to an Asian restaurant. It's a positive experience. It's different from going to a pub. Actually, you feel as if you are going to a different culture when you go to an Asian restaurant..." – British consumer (Jamal, 1996:22)*

> *"[of eating Indian foods outside the home] …the ambience, the atmosphere that it creates, it is very friendly, sharing food with others, it's like a more democratic way of eating" – British consumer (White & Kokotsaki, 2004:289)*

Place also appeared to imbue the food with valued qualities that encouraged or discouraged consumption. These qualities could be nutritional or cultural, a response to social trends or concerns about safety (White & Kokotsaki, 2004; Yang, 2010; Duruz, 2010; Wu, 2016, Avieli,2005; Jo & Cha,2019). For example, Wu noted how the Chinese villages benefitted from the food safety concerns of urban tourists, who assumed that foods in rural areas were 'ecological and pollution free':

> *"Contemporary Chinese urban consumers often imagine that foods produced in less-developed areas especially mountain villages belonging to ethnic minorities are ecological and pollution-free. This evolved an initiative of villages producing many kinds of vegetables, wild plants and local varieties of rice, fish and other produce…products labelled as 'pollution free' or ecological foods considered valuable by the urban Chinese" (Wu, 2016: 420)*

Similarly, to address the unhygienic perception of Chinese restaurants by their Korean hosts, Chinese patrons conducted regular deep cleaning (weekly or bi-weekly) and used glass panels or closed-circuit TVs to make the cooking area visible from the eating area (Yang, 2010).

Ethnic foods were also valued for their ability to traverse space – ingredients, knowledge, skills and equipment – metaphorically and literally. As Glick-Schiller and Çağlar, (2012) have observed, migrant enterprises or markets that arise to meet the demand of migrant communities also create access to their hosts, who value the relative quality, quantity, variety, convenience and affordability of ethnic food products (Duruz, 2010; Dermageot, 2012; Jamal,1996; Yang, 2004; White & Kokotsaki, 2004):

> "*…My other reason for going [to Chatta Supersavers or one of the shops along here] is garlic. Its so much cheaper if you buy it in an Asian supermarket or in an Asian vegetables shop…it seems to be 10p or 8p per head whereas in the supermarket it's twenty-five pence…and quite often not such good garlic. It's much smaller and drier and older…*" (Jamal 1996:22)

Conversely, spaces served as a source of *dis-placement* to host members. For example, Jamal (1996; 21) notes the 'shock' recounted by a member of the host community in a migrant restaurant, an impression that changed with time:

> *"There was a time certainly ... actually when I was living in Liverpool and I used to go to ethnic restaurants there and people used to stop eating and look at you. You know it was such a shock [for them] for somebody white... They thought ... and it's not like that anymore. It's certainly moved on. That's since the seventies, I think that is nearly done. And there's quite a lot of places where a lot of English people go now but that was not only particular to restaurants"(Jamal, 1996:20)*

Places also provided social or functional features e.g. meeting spaces, where the taste and type of the ethnic food was secondary (Eluwole,2019; Yang, 2010); summed up by a Korean interviewee:

> *"The high-end Chinese restaurants are perceived as a good location for meetings because they are quiet, clean, and relatively cheap. When a venue is chosen for a banquet or meeting, the menu is not seriously considered. The place itself is the most important deciding factor" (Yang,2010:102)*

In other instances, place was vicarious and devoid of direct interaction with the Other. Ethnic food memories - tastes, knowledge and experience – acquired through travel or other exposure, such as the internet - were revived and extended to a different setting (Yang, 2010; Duruz, 2010). For instance, the transnational identity of Duruz' subject, shaped his experience ('nice smell') of Asian cooking (in London):

> *"The smell of …outdoor cooking on sort of hawker stores that you get in Asia…You smell peanut oil…I notice even just walking down the streets [there – in Singapore] you can smell cooking everywhere… "And I've also noticed in these flats [in London] …have a lot of sort of Asian cooking [smells coming] …out of the windows and ventilation…So it's always a nice smell when I come down the stairs" (Duruz, 2010: 47)*

In summary, place in its spatial or virtual format, plays an important role in defining the experience of consumption. It could be designed to evoke an experience or emplace associated values that enhance consumption.

Pedagogy of Ethnic foods

This theme explores the experience of learning about ethnic foods and notes the role of context in shaping the willingness to adopt or adapt ethnic foods. Learning is a key component of dietary transformation shaped by individual characteristics such as taste, health status and contextual factors such as previous exposure to a food (Birch,1998). Learning can be associative or social (Birch, 1998; Galef, 2012); shaped by access (Smolla et al., 2015), influenced by need (Bruner and Olson, 1978) and gained over time or through frequent exposure (Birch, 1998).

Six of the fourteen papers described how hosts encountered and adopted ethnic foods, tastes, textures, skills or methods of cooking (Chen et al., 2014; Choudhary et al., 2019; Duruz, 2010; Eluwole et al., 2019; Jamal, 1996; Oakdale, 2008). Learning was enhanced directly through inter-cultural exchange with migrants at schools, ethnic restaurants, retailers or markets (Eluwole et al., 2019, Duruz, 2014; Jamal, 1996) or indirectly through recipe books, mainstream supermarkets or social media (Jamal, 1996; Choudhary et al, 2019).

The hosts demonstrated 'matched dependency' in their experience of adopting (or rejecting) ethnic foods, associating similar ingredients, structure or presentation with known practices or cultural values (Jamal,1996; Oakdale, 2008; Chen et al., 2014). Some distance was observed in the learning environment which allowed hosts to adopt flexible practices, ingredients or methods (such as a private home or social media) (Jamal,1996; Chen et al., 2014; Choudhary et al., 2019; Eluwole et al., 2019).

> *"And some of the vegetables are English like beans and other things you can get all year round. They come from Guatemala or Malaysia… they are not seasonal English vegetables" (Jamal, 1996:22)*
>
> *"My child brings it home [ethnic food ingredients provided as part of the school programme] and for me, I don't know how to make it according to their recipe, but I do make it according to how I'm able to make it. Some I boil it so they can dip in pepper sauce to eat" (Chen et al., 2014: 119)*
>
> *"I really wanted to try lasagne after seeing my friend's Facebook post. It looked yummy. Unfortunately, I could not have it outside because in our culture we don't eat beef. So, I browsed recipes on YouTube and customised my own recipe by replacing beef with paneer and chicken, which came out really delicious. I became popular*

among my friends for my fusion recipe of lasagne and many of my friends now follow it" (Choudhary et al., 2019:19)

Exposure to ethnic foods was also enhanced by the large migrant presence (also associated with greater quality and access) or in settings independent of (usual) traditional foodways (Jamal,1996; Eluwole et al., 2019; Oakdale, 2008):

"I never did eat Asian curries when I was a child. I did mainly at University…at Leeds University where I originally went. There were lots and lots of curry houses just opposite the university. So that is the way I think you start up" (Jamal, 1996:16)

Hosts also reported the social influences in their consumption of ethnic foods comprising the direct influence of migrants through migrant enterprises, supermarkets and restaurants (Jamal,1996; Eluwole et al., 2019; Dermageot et al., 2015) and indirect influence of knowledgeable others such as the media, media personalities, family or friends (Chen et al., 2014; Choudhary et al., 2019; Yang, 2004):

"you know that supermarket [Haq Halal] …they sell all sorts of things. I started going there in the summer and they are very helpful because if you do not know about something…they will always tell you how to use it…" – British consumer of Asian food (Jamal, 1996:18)

"Sometimes my kids pester me to buy jajangmyeon. I try not to buy my kids Chinese food because it's not good for one's health. But when they bother me so much, I can't help buying… from time to time" – Korean consumer of Chinese food (Yang, 2010: 102)

Furthermore, ethnic foods served as a vehicle for achieving other goals related to health, wellbeing, adventure, variety, new skills, tastes and opportunities for social interaction, acceptance (or rejection) of which, was based on previous knowledge or beliefs (Chen et al., 2014; Choudhary et al., 2015; Dermagoet et al., 2012; Jamal,1996; Oakdale, 2008) as noted from the following quotes:

"In our case, based on the recipes we have tried, even though that is something we use; the mixes and like you say it comes from other cultures… it is not very important if it comes from another culture, but how healthy it is [Latino] (Chen et al., 201: 1194)

For the Indian hosts described in Choudhary's paper, the purported health benefits of the continental (European) breakfast was devalued, due in part to their ingrained tastes:

"After watching the health benefits of continental cuisines on social media, we tried it once while staying in a hotel and it was completely tasteless…no flavour…no colour at all. After having Indian food for so many years it is difficult for us to eat this kind of food" (Choudhary et al., 2019:22)

Discussion

This study, which explores the host's contextual experience of ethnic food, demonstrates how different consumption practices 'emerge' from the interlinkages between place and people.

Overall, our findings support Andreeva and Unger's definition of host acculturation as a 'context-specific' and 'multi-factorial' process (2015). The consumer practice of 'integration' was the closest metaphor for dietary acculturation particularly amongst hosts, who 'embodied' ethnic food consumption as part of their identity i.e. where consumption of ethnic food aligned with important values expressed in their everyday lives. This selective 'embodiment' was informed by the learning styles that adopted and adapted ethnic foods based on need, sometimes devoid of the migrant presence or an overt 'cultural' value, As Wise (2011) has argued, food plays a role mediated by the actors; the space and the site of consumption, which serve to emphasise or understate difference, resulting in different levels of engagement. Hosts experiences ranged from outright rejection of ethnic foods, occasional 'superficial' exposure (re)produced through an interpretive migrant lens (Wessendorf & Farrar, 2021), to active host personalisation, experimentation and integration where hosts associated consumption with their own re(created) meaning or values.

Rejection of ethnic foods appeared to signal a power differential in the host-migrant relations that was perceived as a threat to the host's identity (Luedicke, 2015); reported in some studies as neophobia or a reassertion of cultural identity through the host's promotion of their own 'ethnic' foods (Montisson & Tan, 2016; Lind & Barham, 2004). For some of the participants in the studies reviewed however, continuous exposure led to acceptance and subsequent consumption over time (Jamal, 2003; Oakley, 2008).

Although ethnic foods provide opportunities for multicultural engagement (Wise, 2011), it is not a function of migrant size (Ray, 2016) as the significant influence of a few settlers with sufficient economic or political power can attest (Abbots, 2016). Nor does it necessarily preclude or result in direct interaction with migrants (i.e. migrant visibility and encounter do not produce marketplaces -

Drenoskwi & Popkin, 2002); signal cultural acceptance, conviviality (Amin, 2002); nor involve production by the ethnic Other, such as Chinese patrons of Italian cafes (Wise, 2011).

Furthermore, direct contact between hosts and migrant populations was not the only, nor necessarily the most important influence on consumption practices. Rather, experiences matched values that consumers used to negotiate important needs (and/or identity) in the context; that invariably expands the market (Askegaard et al., 2005). Moreover, like migrants, the hosts may reflect multiple consumer affiliations and identities - not just one mainstream influence - that changes with contextual factors (Bhatti & Ram, 2009; Kipnis, et al., 2014) and leads to 'fluid' consumption practices referred to in consumption research as 'multiculturation' (Kipnis et al., 2014). These observations highlight the limits of ethnic or regional affiliations (Askegaard et al., 2005) or proxy measures of acculturation (e.g., language acquisition, length of stay - Abraido-Lanza et al., 2006), as a means of characterising consumption practices. There is a broader need for an understanding of culture as a 'conventional understanding manifest in act and artefact' (Redfield, 1941 cited in Napier et al., 2014).

The features of acculturation identified in this review suggest more complex explanations for the adoption of new foods and or practices. Consumers may tap into ethnic markets such as the Swedish adoption of the tacos to reflect modern family values (Soler & Plazas, 2012), the convenience of Turkish kebab that is popular in Germany (Lui et al., 2018); the increase in superfoods - indigenous foods with functional or medicinal properties - produced to meet 'nutritional', 'natural' or 'ethical' values (Lee, 2017, Loyer, 2018) or the growth in the Halal market that adhere to religious restrictions (Ayuub, 2018). The changing patterns of production, consumption and access emphasise the complexity of culture and cultural diffusion.

The findings also highlight the dynamic role of places which shape and are shaped by the interactions within them (Agnew, 2011). In this study, the hosts' experience of ethnic food was defined in part by the spaces, which changed with the meaning of the practice depending on the consumer and context. Similarly, a recent comparative study of diverse (and not so diverse) settings demonstrated how space produced and fostered inter-cultural interactions and vice versa (Wessendorf & Farrar 2021). As we found in our study, place played a vital role in consumption, independent of the food – an observation made by Ray (2016) in the study of ethnic restaurants. This was also reflected by different studies of the adaptation of (Western) McDonalds in China (Yan, 2012), the Netherlands (Stephenson, 2009) and Russia (Caldwell, 2004), which reported how the design of spaces (re)created consumption practices. In addition, the success of modern ethnic

franchises, such as Wagamama's in the United Kingdom has partly been attributed to the design of space (Wilkinson, 2017).

Implications for Public Health

In the face of societal transformation and increasing diversity, there are growing calls for public health to engage with the complexity of lived experiences; linking scientific advances with underlying social, demographic, economic and cultural features of the population in their environments (Fox and Smith, 2011; Lang and Rayner, 2012; Mozaffarian et al, 2018; Popay et al, 1998).

Migration changes people, it enhances cultural diffusion and exposure to different cultures, meanings and practices. For those with limited agency, such as refugees or poor indigenous communities, who have less choice and more vulnerabilities, these limitations could foster health inequalities. The superdiverse nature of migration means that reified nationalistic boundaries that delineate the migrant, host, ethnic, cultural or racial groups (Glick-Schiller & Çağlar,2013; Fox & Jones, 2013) are fluid and inadequate markers for understanding changing tastes (Senaur, 2001) or identifying the institutional (Gkiouleka et al., 2018, Abraido-Lanza et al., 2006) and or political factors at the root of inequalities (Phillimore, 2011). Relational approaches are needed, that identify the (changing) cultural features of local places, uncover systems of value and trace corresponding consumption practices in order to enrich policies and provide effective levers to influence population health (Cummins et al., 2007; Napier et al., 2014).

Migration also reshapes local and global food systems; introducing new actors, adapting processes of production, routes of distribution and embedding roots of identity, values and meanings (Napier et al., 2014). Sidney Mintz's classic study of sugar revealed a complex movement of people, ideas and products that resulted in the political and economic transformation of several societies (across borders) and shaped the consumption of sugar (Mintz,1985). Magrach and Sanz (2020), have more recently drawn attention to the destabilising impact of consumer demand for trendy 'healthy foods' on environments and livelihoods in different parts of the world. A broader cross-cultural awareness of the responsibility of public health to preserve the environment and ecological balance of food systems should be incorporated into policy (Lang & Rayner, 2012).

Finally, migration changes places. The increasing focus of public health policy on the quality of food environments and growing ethical and environmental concerns on local and sustainable

sources, brings place into sharp focus. Place reproduces the everyday needs of those who traverse its boundaries resulting in a diversified look, sound and smell (Rath et al, 2018; Panayi, 2010). Several studies including those by Zanoni (2018), Glick-Schiller and Çağlar (2013), Zukin (2012), Dixon (2011) and Massey (2020) suggest that places are a product of the interaction between social, political, environmental and cultural drivers, which generate their own inequalities. More research that maps interactions between consumers as active catalysts in the (re)production of space could be used to complement the spatial research on the food environment; extending local boundaries to other global sites of production (Popay et al, 1998).

Limitations of the Review

The review included a range of journals across different disciplines describing both local and international host-migrant acculturation as the experience of ethnic foods from countries in both the Global North and Global South. However, considering the wide scope, there were no articles identified amongst host communities in African countries which accounts for 53 - 84% of international migrants (IOM, 2019). This may reflect a paucity of research on host acculturation in these communities. The review could also have been limited by the number of databases searched, the search terms and the inclusion/exclusion criteria that may not be equally sensitive across all disciplines; such as the exclusion of major anthropological monographs books/book chapters.

Conclusions

Ethnic foods are a social construction, which can be commodified for gain, used to create or deepen value or migrate with people and networks. These movements shaped by globalisation and its antecedent technological developments have contributed to the social transformation of places (Castles, 2018), people and food systems; a change that poses challenges and also invites opportunity. These transformations include many diverse interactions, that produce complex and dynamic markets, consumers and products (Demangeot et al, 2015). Identifying the integrated frameworks that lead to emergent practices could inform the design and delivery of more joined-up policy for better population health (Cranfield, 2013; Lusk and McCluskey, 2018).

References

Abraído-Lanza, A. F., Armbrister, A. N., Flórez, K. R., & Aguirre, A. N. (2006). Toward a theory-driven model of acculturation in public health research. *American Journal of Public Health*. https://doi.org/10.2105/AJPH.2005.064980

Alidu, L., & Grunfeld, E. A. (2018). A systematic review of acculturation, obesity and health behaviours among migrants to high-income countries. *Psychology and Health*. https://doi.org/10.1080/08870446.2017.1398327

Andreeva, V. A., & Unger, J. B. (2014). Host society acculturation and health practices and outcomes in the United States: Public health policy and research implications worldwide. *Journal of Public Health Policy*, *35*(3), 278–291. https://doi.org/10.1057/jphp.2014.9

Andreeva, V. A., & Unger, J. B. (2015). Determinants of Host Society Acculturation and Its Relationship with Health Behaviors and Outcomes: A New Research and Intervention Framework. *Journal of Immigrant and Minority Health*, *17*(5), 1420–1426. https://doi.org/10.1007/s10903-014-0104-x

Aromataris, E., Fernandez, R., Godfrey, C., Holly, C., Kahlil, H., Tungpunkom, P. (2015) Summarizing systematic reviews: methodological development, conduct and reporting of an Umbrella review approach. *International Journal of Evidence Based Health,13(3):*132-40.

Ashley, B., Hollows, J., Jones, S., Taylor, B. (2004). Food and Cultural Studies. United Kingdom: Taylor & Francis.

Aspers, P. and Corte, U. (2019). What is the qualitative in qualitative research. *Qualitative Sociology* 42: 139 - 160

Avieli, N. (2005). Roasted pigs and bao dumplings: Festive food and imagined transnational identity in Chinese-Vietnamese festivals. *Asia Pacific Viewpoint*, *46*(3), 281–294. http://dx.doi.org/10.1111/j.1467-8373.2005.00284.x

Ayala, G. X., Baquero, B., & Klinger, S. (2008). A Systematic Review of the Relationship between Acculturation and Diet among Latinos in the United States: Implications for Future Research. *Journal of the American Dietetic Association*, *108*(8), 1330–1344. https://doi.org/10.1016/j.jada.2008.05.009

Ayyub, R. M. (2015). An empirical investigation of ethnic food consumption a perspective of majority ethnic group. *British Food Journal*, *117*(4), 1239–1255. https://doi.org/10.1108/BFJ-12-2013-0373

Bambra, C., Gibson, M., Sowden, A., Wright, K., Whitehead, M., Petticrew M., (2010). Tackling the wider social determinants of health and health inequalities: evidence from systematic reviews. Journal of Epidemiology & Community Health, 64:284-291.

Bambara C., Smith, K.E. and Pearce, J., (2019). The politics of health and place. Social Science and Medicine. 232:36 - 42

Bauer, I. (2008). The health impact of tourism on local and indigenous populations in resource-poor countries. *Travel Medicine and Infectious Disease*. https://doi.org/10.1016/j.tmaid.2008.05.005

Brunt, P., & Courtney, P. (1999). Host perceptions of sociocultural impacts. *Annals of Tourism Research*. https://doi.org/10.1016/S0160-7383(99)00003-1

Booth, A. Searching for qualitative research for inclusion in systematic reviews: a structured methodological review. *Syst Rev* **5,** 74 (2016). https://doi.org/10.1186/s13643-016-0249-x

Bourhis, R. Y., Montaruli, E., El-Geledi, S., Harvey, S. P., & Barrette, G. (2010). Acculturation in Multiple Host Community Settings. *Journal of Social Issues*, *66*(4), 780–802. https://doi.org/10.1111/j.1540-4560.2010.01675.x

Caldwell, M.L. (2004). Domesticating the French fry: McDonalds and consumption in Moscow. Journal of Consumer Culture. 4(1): 5-23

Castles, S. (2018). Social Transformation and Human Mobility: Reflections on the Past, Present and Future of Migration. *Journal of Intercultural Studies*. https://doi.org/10.1080/07256868.2018.1444351

Chen, Q., Goto, K., Wolff, C., Bianco-Simeral, S., Gruneisen, K., & Gray, K. (2014). Cooking up diversity. Impact of a multicomponent, multicultural, experiential intervention on food and cooking behaviors among elementary-school students from low-income ethnically diverse families. *Appetite*, *80*, 114–122. https://dx.doi.org/10.1016/j.appet.2014.05.009

Choudhary, S., Nayak, R., Kumari, S., & Choudhury, H. (2019). Analysing acculturation to sustainable food consumption behaviour in the social media through the lens of information diffusion. *Technological Forecasting and Social Change*. https://doi.org/10.1016/j.techfore.2018.10.009

Cooke A., Smith, D.M., Booth, A. (2012). Beyond PICO: The SPIDER tool for Qualitative Evidence Synthesis. *Qualiative Health Research*. 22(10):1435 - 1443

Cranfield, J. (2013). The Changing Landscape of the Canadian Food Market: Ethnicity and the Market for Ethnic Food. *Canadian Journal of Agricultural Economics*, *61*(1), 1–13. https://doi.org/10.1111/cjag.12000

Crawley, H., & Skleparis, D. (2018). Refugees, migrants, neither, both: Categorical fetishism and the politics of bounding in Europe's 'migration crisis.' *Journal of Ethnic and Migration Studies*, *44*(1). https://doi.org/10.1080/1369183X.2017.1348224

Comarroff,J.L., and Comarroff, J. (2009). Ethnicity Inc. University of Chicago Press.

Cruz, A. G. B., & Buchanan-Oliver, M. (2017). Moving toward settlement: tourism as acculturation practice. *European Journal of Marketing*, *51*(4), 772–794. http://dx.doi.org/10.1108/EJM-09-2015-0637

de Morais S.P., Gittlesohn J., Unsain R.F., Roble O.D., Scagliusi F.B. (2016). The use of Pierre Bourdieu's distrinction concepts in scientific articles studying food and eating: a narrative review. *Appetite* 96(1):174 -186

Delavari, M., Sonderlund, A. L., Swinburn, B., Mellor, D., & Renzaho, A. (2013). Acculturation and obesity among migrant populations in high income countries--a systematic review. *BMC Public Health*, *13*, 458. https://dx.doi.org/10.1186/1471-2458-13-458

Demangeot, C., & Sankaran, K. (2012). Cultural pluralism: Uncovering consumption patterns in a multicultural environment. *Journal of Marketing Management*, *28*(7–8), 760.

Demangeot, C., Broderick, A. J., & Samuel Craig, C. (2015). Multicultural marketplaces: New territory for international marketing and consumer research. *International Marketing Review*, *32*(2). https://doi.org/10.1108/IMR-01-2015-0017

Dey, B. L., Alwi, S., Yamoah, F., Agyepong, S. A., Kizgin, H., & Sarma, M. (2019). Towards a framework for understanding ethnic consumers' acculturation strategies in a multicultural environment: A food consumption perspective. *International Marketing Review*, *36*(5). https://doi.org/10.1108/IMR-03-2018-0103

Dixon, J. (2011). Diverse food economies, multivariant capitalism and the communty dynamic shaping contemporary food systems. *Community Development Journal* 46(Suppl.1): i20-i35

Duffy, A., & Hui Xian, G. N. (2021). Edible communities: How Singapore creates a nation of consumers for consumption. *Journal of Consumer Culture*, *21*(4), 782–799. https://doi.org/10.1177/1469540519876003

Duruz, J. (2010). Floating food: Eating "Asia" in kitchens of the diaspora. *Emotion, Space and Society*, *3*(1), 45–49. https://doi.org/10.1016/j.emospa.2009.08.002

Elie, S. D. (2014). Qat Consumption in Soqotra: Diaspora Formation and Cultural Conversion. *Northeast African Studies*, *14*(1), 1–41.

Eluwole, K. K., Lasisi, T. T., Elidemir, S. N., & Guzel, E. (2019). Qualitative investigation of the impact of internationalization of education on host community's eating habit. *Journal of Public Affairs*, *20*(2), 1–8. https://doi.org/10.1002/pa.2036

Flower, R., and Swan, E. (2012) Eating the Asian other? Pedagogies of food multiculturalism in Australia. PORTAL: *Journal of Multidiscplinary International Studies 9(2):*

Fox, M., Thayer, Z. M., & Wadhwa, P. D. (2017). Acculturation and Health: The Moderating Role of Sociocultural Context. *American Anthropologist*, *119*(3). https://doi.org/10.1111/aman.12867

GBD 2017 Diet Collaborators (2019). Health effects of dietary risks in 195 countries 1990 - 2017: a systematic analyses for the Global Burden of Disease Study. The Lancet

Gyimothy, S., and Mykeltun, R.J. (2009). Scary food: commodiying culinary heritage as adventures in tourism. Journal of Vacation Marketing 19 (3): 259 -273

Handley, M. A., Robles, M., Sanford, E., Collins, N., Seligman, H., Defries, T., Perez, R., & Grieshop, J. (2013). Navigating changing food environments - Transnational perspectives on dietary behaviours and implications for nutrition counselling. *Global Public Health*. https://doi.org/10.1080/17441692.2012.729218

Heale, R., & Twycross, A. (2018). What is a case study?. Evidence-based nursing, 21(1), 7–8. https://doi.org/10.1136/eb-2017-102845

Hill, H., & Negara, S. D. (2018). Introduction: The Indonesian Economy in Transition - Policy Challenges in the Jokowi Era and Beyond. *Journal of Southeast Asian Economies*, *35*(2), 121–124. http://dx.doi.org/10.1355/ae35-2a

hooks, b. (2006). Eating the Other: Desire and Resistance. *Media and Cultural Studies: Key Works*, 366–380.

Hunt, L.M., Schneider, S., Comer, B. (2004). Should acculturation be a variable in health research? a critical review of research on US Hispanics. *Social Science and Medicine*. 59:973-986

Ibarra-Cantu, C., & Cheetham, D. F. (2021). Consumer multiculturation in multicultural marketplaces: Mexican immigrants' responses to the global consumer culture construction of Tex-Mex as Mexican food. *Journal of Business Research*, *134*. https://doi.org/10.1016/j.jbusres.2021.05.012

International Organization for Migration (IOM), 2019. *World Migration Report 2020*. IOM. Geneva

Jackson P. (2002). Commercial cultures transcending the cultural and the economic. *Progress in Human Geography*. 26 (1): 3-18

Jamal, A. (1996). Acculturation: The symbolism of ethnic eating among contemporary British consumers. *British Food Journal*, *98*(10), 12–26. https://doi.org/10.1108/00070709610153786

Jo, M., & Cha, J. (2019). The influence of Korean-Chinese on the Korean tourism industry through acculturation and adaptation using the medium of food. *Journal of Tourism and Cultural Change*, *17*(4), 416–431. http://dx.doi.org/10.1080/14766825.2019.1591691

Karaosmanoğlu, D. (2020). How to study ethnic food: Senses, power, and intercultural studies. In *Journal of Ethnic Foods* 7(1). https://doi.org/10.1186/s42779-020-00049-1

Kershen, A. J. (2002). Introduction: Food in the migrant experience. In *Food in the migrant experience*.

Kinsey, J., & Senauer, B. (1996). Consumer Trends and Changing Food Retailing Formats. *American Journal of Agricultural Economics*, *78*(5), 1187–1191. https://doi.org/10.2307/1243489

Kipnis, E., Broderick, A. J., & Demangeot, C. (2014). Consumer multiculturation: consequences of multi-cultural identification for brand knowledge. *Consumption Markets Culture*, *17*(3), 231–253. http://dx.doi.org/10.1080/10253866.2013.778199

Korstens, I., and Moser, A. (2017). Series: Practical guidance to qualitative research. Part 1: Introduction.*Europen Journal of General Practice*, 23 (1): 271 - 273

Lang, T., & Rayner, G. (2012). Ecological public health: The 21st century's big idea? An essay by Tim Lang and Geof Rayner. In *BMJ (Online)* (Vol. 345, Issue 7872). https://doi.org/10.1136/bmj.e5466

Lee, R. L. M. (2017). Malaysian Identities and Mélange Food Cultures. *Journal of Intercultural Studies*, *38*(2), 139–154. http://dx.doi.org/10.1080/07256868.2017.1289907

Leung, G. (2010). Ethnic foods in the UK. *Nutrition Bulletin*, *35*(3). https://doi.org/10.1111/j.1467-3010.2010.01840.x

Loyer, J., & Knight, C. (2018). Selling the "Inca superfood": nutritional primitivism in superfoods books and maca marketing. *Food, Culture and Society*. https://doi.org/10.1080/15528014.2018.1480645

Luedicke, M. K. (2015). Indigenes' responses to immigrants' consumer acculturation: A relational configuration analysis. *Journal of Consumer Research*, *42*(1), 109–129. https://doi.org/10.1093/jcr/ucv002

Lusk, J. L., & McCluskey, J. (2018). Understanding the impacts of food consumer choice and food policy outcomes. *Applied Economic Perspectives and Policy*, *40*(1), 5–21. https://doi.org/10.1093/aepp/ppx054

Mackain S., Ellito H., Busby H., Popay J. (2003). 'Everywhere and nowhere': locating and understanding the new public health. Health and Place 9(3): 219 - 229

Mascarello, G., Pinto, A., Rizzoli, V., Tiozzo, B., Crovato, S., & Ravarotto, L. (2020). Ethnic food consumption in Italy: The role of food neophobia and openness to different cultures. *Foods*, *9*(2). https://doi.org/10.3390/foods9020112

Magrach, A., Sanz, M.J. (2020) Environmental and social consequences of the increase in the demand for 'superfoods' world-wide. *People and Nature*, 2: 267– 278. https://doi.org/10.1002/pan3.10085

Mintz, S. W., & Du Bois, C. M. (2002). The anthropology of food and eating. *Annual Review of Anthropology*, *31*. https://doi.org/10.1146/annurev.anthro.32.032702.131011

Mozaffarian, D., Angell, S. Y., Lang, T., & Rivera, J. A. (2018). Role of government policy in nutrition-barriers to and opportunities for healthier eating. *BMJ (Online)*. https://doi.org/10.1136/bmj.k2426

Murray, D. A. B. (2014). Real Queer: "Authentic" LGBT Refugee Claimants and Homonationalism in the Canadian Refugee System. *Anthropologica*, *56*(1), 21–32.

Mintel 2019. Ethnic Restauarants and take away - UK. February 2019 Report Brochure. https://reports.mintel.com/display/920368/ (accessed December 2021)

Oakdale, S. (2008). The commensality of "contact", "pacification", and inter-ethnic relations in the Amazon: Kayabi autobiographical perspectives. *Journal of the Royal Anthropological Institute*, *14*(4), 791–807. http://dx.doi.org/10.1111/j.1467-9655.2008.00531.x

Osei-Kwasi, H. A., Powell, K., Nicolaou, M., & Holdsworth, M. (2017). The influence of migration on dietary practices of Ghanaians living in the United Kingdom: a qualitative study. *Annals of Human Biology*, *44*(5), 454–463. https://doi.org/10.1080/03014460.2017.1333148

Page, M.J., McKenzie, J.E., Bossuyt P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

Parzer, M., Astleithner, F., & Rieder, I. (2016). Deliciously Exotic? Immigrant Grocery Shops and Their Non-Migrant Clientele. *International Review of Social Research*, *6*(1), 26–34. https://doi.org/10.1515/irsr-2016-0004

Paulson-Box, E., Williamson P. (1990). The Development of the Ethnic Food Market in the UK. *British Food Journal*, 92 (2): 10-15. https://doi.org/10.1108/00070709010141460

Penaloza, L., & Gilly, M. C. (1999). Marketer acculturation: The changer and the changed. *Journal of Marketing*, *63*(3), 84–104.

Penaloza, L. (2007). Mainstreet USA revisited. *The International Journal of Sociology and Social Policy*, *27*(5/6), 234–249.

Popay J., Williams G., Thomas C., Gartrell T. (1998). Theorising inequalities in health: the place of lay knowledge. Sociology of Health and Illness 20(5):619 - 644

Reddy, G. and van Dam, R.M. (2020). Food, culture and identity in multicultural socieities: insights from Singapore. *Appetite 149: 104633*

Ricke, A. (2018). Producing the Middle Class: Domestic Tourism, Ethnic Roots, and Class Routes in Brazil. *The Journal of Latin American and Caribbean Anthropology*, *23*(2), 281–300.

Said, E.W. (1978). Orientalism. New York, Pantheon Books.

Satia-Abouta, J., Patterson, R. E., Neuhouser, M. L., & Elder, J. (2002). Dietary acculturation: Applications to nutrition research and dietetics. *Journal of the American Dietetic Association*. https://doi.org/10.1016/S0002-8223(02)90247-6

Senauer B. (2001) The food consumer in the 21st century: new research perspectives. Working Discussion Paper 01-03: Agric Economics /Research in Agricultural and Applied Economics

Stake R.E., (2006). Multiple Case Study Analyses' newYork: The Guildford Press.

Stephenson, P.H. (1989) Going to McDonald's in Leiden: Reflections on the Concept of Self and Society in the Netherlands. Ethos 17(2): 226-247

Stiffler, M. J. (2014). Consuming Orientalism: Public Foodways of Arab American Christians. *Mashriq & Mahjar Journal of Middle East and North African Migration Studies*, *2*(2). https://doi.org/10.24847/22i2014.42

Solér, C., & Plazas, M. C. (2012). Integration of ethnic food into Swedish food rituals. The cultural fitness of tacos. *Appetite*, *58*(3), 928–935. https://doi.org/10.1016/j.appet.2012.02.010

Terragni, L. and Roos, G. (2018). People moving with food from and to Northern Europe. Anthropology of Food. https://doi.org/10.4000/aof9123

Thomas, J., Harden, A.(2008). Methods for the thematic synthesis of qualitative research in systematic reviews. BMC Medical Research Methodology.8(45) doi:10.1186/1471-2288-8-45

Tuomainen, H. M. (2009). Ethnic identity, (Post)colonialism and foodways: Ghanaians in London. *Food, Culture and Society*, *12*(4), 525–554. https://doi.org/10.2752/175174409X456773

Urquia, M. L., & Gagnon, A. J. (2011). Glossary: Migration and health. *Journal of Epidemiology and Community Health*, *65*(5). https://doi.org/10.1136/jech.2010.109405

Vertovec, S. (2007). Super-diversity and its implications. *Ethnic and Racial Studies*, *30*(6), 1024–1054. https://doi.org/10.1080/01419870701599465

Verbeke, W., & Lopéz, P. G. (2005). Ethnic food attitudes and behaviour among Belgians and Hispanics living in Belgium. *British Food Journal*, *107*(11), 823–840.

Warde, A., Cheng, S. L., Olsen, W., & Southerton, D. (2007). Changes in the practice of eating: A comparative analysis of time-use. *Acta Sociologica*. https://doi.org/10.1177/0001699307083978

Warde, A., Whillans, J., & Paddock, J. (2019). The allure of variety: Eating out in three English cities, 2015. *Poetics*, *72*. https://doi.org/10.1016/j.poetic.2018.09.001

Weisberg-Shapiro, P., & Devine, C. M. (2015). "Because we missed the way that we eat at the middle of the day:" Dietary acculturation and food routines among Dominican women. *Appetite*, *95*, 293–302. https://doi.org/10.1016/j.appet.2015.07.024

White, H., & Kokotsaki, K. (2004). Indian food in the UK: Personal values and changing patterns of consumption. *International Journal of Consumer Studies*, *28*(3), 284–294. https://doi.org/10.1111/j.1470-6431.2004.00369.x

Wilk, R.R (1999). "Real Belizian Food": Building the local identity in the transnational Carribbean. *American Anthropologist, 101 (2): 244 - 255*

Wilson, A., & Renzaho, A. (2015). Intergenerational differences in acculturation experiences, food beliefs and perceived health risks among refugees from the Horn of Africa in Melbourne, Australia. *Public Health Nutrition*, *18*(1). https://doi.org/10.1017/S1368980013003467

Wilkinson S., (2017). How Wagamama changed the way we eat. The Guardian https://www.theguardian.com/lifeandstyle/2017/nov/19/how-wagamama-changed-the-way-we-eat

Wu, X. (2016). Ethnic foods as unprepared materials and as cuisines in a culture based development project in Southwest China. *Asian Ethnology, 75 (2): 419 - 439*

Yan, Y. (2012). Of hamburgers and social space: consuming McDonalds in Beijing. In. Food and Culture edited by Carole Couniham and Penny Van Esterick.3rd Edition Routlege: New York pp 80 - 103

Yang, Y.-K. (2010). Well-Being Discourse and Chinese Food in Korean Society. *Korea Journal*, *50*(1), 85.

Zanoni, E. (2018) Migrant Marketplaces: globalizing histories of migrant foodways, Global Food History, 4 (1): 3-21, DOI: 10.1080/20549547.2018.1423828

Zafari, K., Allison, G., & Demangeot, C. (2015). Practising conviviality: social uses of ethnic cuisine in an Asian multicultural environment. *The Journal of Consumer Marketing*, *32*(7), 564–575.

Zukin, S. (2008). Consuming authenticity: From outposts of difference to means of exclusion. *Cultural studies*, *22*(5), 724-748.

Zukin, S. (2012). The social production of urban cultural heritage: Identity and ecosystem on an Amsterdam shopping street. *City, Culture and Society* 3: 281 - 291

Chapter 5: Qualitative Results

Background

This chapter presents the results of the mixed qualitative component for this project, which was designed to explore the interaction between place and people, and comprised photovoice workshops, participatory/non-participatory observation and interviews with stakeholders, residents and retailers. Based on a deductive and inductive analyses of the data, a comparative exploration of social interactions within each of the case-study areas is presented using Lefebvre's and Massey's concepts of place as outlined in the conceptual framework. This chapter further explores each concept in sub-sections and concludes with a summary of the results. The findings highlight how migration is framed, harnessed and put to work in the (re) production of local food places influenced by internal and external features of in Kingston-Upon-Hull and Hackney, Borough of London.

5.1 Introduction

Lefebvre (1991) and Massey's (2005) writings emphasise place as an active site that interacts with and manifests the various inter-relationships within it. These interactions, which are uneven and hierarchical i.e., represent power dynamics, incorporate multiple components - the historical, spatial, demographic, economic, political and geographical. These interactions or relationships (and hence space), are constantly being (re) produced (Lefebvre, 1991) or always 'becoming' and contribute to the 'sense of place' (Massey, 1999). Lefebvre proposed tripartite concepts - representational space, representations of space and spatial practices - to further elucidate the sense of place (Lefebvre 1991). Their critical appraisal of place, informed by Marxian views, highlighted the hegemonic role of capital in the (re)structure of space and the experience of inequality. The following sections will explore findings from each of the case-study areas through the inter-twined concepts proposed by Lefebvre (1991) and Massey (2005) in the analyses of space namely: place as an active participant, multiplicity of place, politics of place, spatial practices, representation of space and representational space. The following sections present findings from the mixed qualitative component of the study for each case study.

5.2 Kingston-Upon-Hull

The study participants in Hull included migrants and non-migrants, who lived or worked in Hull with varying lengths of stay ranging from about 2 months to about 70 years (where a resident had spent all of their life).

A wide range of places were explored further through the voices of the photovoice participants and stakeholder, resident and retailer interviews. These comprised private and public spaces, foods and food situations that included: private homes, coffee-shops, restaurants, take-away stores, super-stores, local independent shops/businesses (including migrant/non-migrant), food deserts, food banks, food pantries, local charities, the open market, chain fast food restaurants, private gardens, community allotments, urban farms, vending machines, school projects and virtual (including trans-national) spaces. The social interactions in these places will be examined further in the following sub-sections.

5.2.1 Place as an active agent in the re(production) of place

> *"Cities are produced by the flows of economic, social, cultural and political actors that coincide and collide in specific places over time" (Atkinson et al, 2017: 3).*

The anthology to celebrate Hull as the UK City of Culture in 2017 (Starkey et al., 2017) provided a detailed account of the historical links between various industries and its geographical location that comprises the Humber estuary, which drains about a fifth of the UK waterways. This natural environment led to the development of Hull as a major port for vessels with deep anchors, designed to carry great volumes of goods over longer routes. The combination of nature, political governance, investment and technology facilitated the establishment of one of the busiest shipping trading routes on the east coast of England that was a major source of revenue. The worldwide reputation of Hull's whaling and distant water fishing fleet and associated industries (such as the whale oils, chemicals, paints), and later transport with the development of the railway (late 18th century), created significant wealth and job opportunities.

The city also had a political class that influenced notable developments such as the abolishment of slavery. The decline of the whaling/fishing industry, de-industrialisation and less developed agricultural land[4] relative to the surrounding regions contributed to widespread poverty and deprivation in the late 20th century. More recently, this unique topography and investment in

[4] Although agricultural land makes up 90% of the land area in East Riding Council , it only contributes 2-3% to economy and development in the region [see: www.eastriding.gov.uk/living/rural-life/food-and-farming/farming-and-land-use - accessed June 2024).

the Hull marina has attracted a successful tourist market (Tommarchi & Bianchini, 2022) although there are reported risks due to the uncertainty of the Humber tide – (KS6). In addition, the quality of the water, which is naturally hard, has impacted the development potential of other industries in the region: *one of the things was that they couldn't bring in vegetable processing and canning because we have hard water… [on redevelopment] – KP3*

Kingston-Upon-Hull was described by the study participants by its peculiarities, in terms of its development and relatively isolated geographical location but also its perception as a thoroughfare to other places.

> *"the end of the line (end of the railway line) … a land that time forgot, a place to pass through…" – KS6*

> *"…Hull isn't any different really to a lot of cities… because it is a park, there is lots of people coming in and lots of people going so it is bound to have that global influence…" – KS7*

The historical fishing (and whaling) industry was supported by a close-knit community of fishermen described as 'typically insular' forming territorial enclaves (i.e., comprising of extended family – mainly matriarchies that lived close to each other while the men were at sea). These territorial ties, which were split East and West of the city, extended to support for different rugby and football leagues (KS10). Study participants from Hull, described it as a 'friendly' place, with many networks that provided 'roots' (where people often knew each other through family or friends in the community). As described by one long term resident:

> *"…If you are born here, you have invisible roots to the mud in Humber bank and those roots always pull you back wherever you go …" KP3*

Following deindustrialisation, and closure of the docks in the 1970s, the fishing community were re-located within Hull to high rise buildings to make way for further investment and redevelopment. Stakeholders observed that the gradual displacement fostered a loss of identity, particularly amongst the men who had lost their livelihoods, skills, community and 'sense of place'. The internal migration from the 'old dense housing' to council estates, outside the city centre, also removed nodes – places of social interaction such as the corner stores – that formed a part of the community. These spatial movements concentrated poverty in certain parts of the city. As one long-term resident observed:

"…The developed area has more than doubled since about 1950s… There was a lot of the old dense housing, which had the corner shops in it that has been swept away in the pursuit of ever bigger sites to present modern opportunity to industry to come and move into the city [which they never did]…so they demolished all the middle parts of the town and created all those empty sites and moved all the population out to council estates that couldn't afford to live there. Now all the well-to-do people, moved outside the city boundary [areas: Rotterdam, Anlaby, Willoughby, etc,] but they are another local authority…. Now in some other cities of a similar size, they have vast areas of farm land and other things within the local authority boundaries … and so they have a slightly more affluent population helping to boost employment… whereas in Hull [there is a lot of poverty - KP4]…." – KP3

"Not all over but a lot of the big estates where people have never had chances for years, four or five generations of Margaret Thatcher's victims, where they have had everything taken from them… Once proud communities have been reduced … I am being a bit political here but that's where we have got our concerns…those White communities of young men, of people with no hope, I know, blame the immigrants… - KS8".

Study participants who were immigrants to Hull noted that it was more "peaceful" (KP1), "affordable…in terms of housing" (KP5) but less busy, diverse or connected compared to big cities like London, Leeds or Sheffield. Furthermore, the port, fishing industry, manufacturing industries and more recently the redesign and housing construction in parts of the city had led to different types of migrant flows.

Evans (2017) provides a detailed account of immigration to Hull from the Dutch Vikings to more recent immigration of EU and non-EU nationals. Due to the port, trade and particularly transportation, the docks and railways provided a gateway to other parts of Britain and the world. Hull had many transient migrants on their way elsewhere (traveling for economic purposes or fleeing persecution). There were also accounts of large German and Jewish settlements in the 17th and 18th century, mainly mariners and merchants and sophisticated Europeans whose successful commercial interests contributed much to the wealth of the city (attributed to their ability to "assimilate and integrate" Evans, 2017: 154); visible migrants such as Blacks were a minority and of a different social class. As today, migrant flows were influenced by events in other parts of the world, policies on migration, trade and investment in infrastructure.

The rise in migration reported in more recent Census', particularly from 2011 Census, could be attributed to the presence of agricultural workers from EU ascension countries, students and workers. In addition, since 2017, Hull has welcomed refugees and asylum seekers, as a City of Sanctuary – KS8 (part of the UK Government Gateway programme for which it receives funding; possibly related to relatively high social housing stock). These factors have shaped not just the types but also the nature of the human flows, settling and moving through the city. These flows have also impacted the movement of food. Evans' (2017) account includes records of exotic Asian spices and fruit (bananas and pineapples from the Caribbean and oranges and lemons from the Mediterranean) complementing the local staples of wheat, potatoes and fish. At the peak of the fishing industry, weekly fish portions were one of the 'perks' of the dockhands with fishmongers on every street (KS6). The growing migrant settlements have led to 'ethnic' markets, restaurants, butcher shops and other food places designed to meet specific (cultural) needs of different groups.

Place as an active agent, recognises space as an intricate part of the social interactions that produce it. The unique features of space constitute an integral part of the process of dynamic interrelations, which are complex combinations of mobilities i.e., place is not static agent in its production. The many interactions of time and place, which Massey refers to as a 'time-space' compression', (2005: 148) have and continue to (re)create various versions of Hull, which its residents navigate and experience in different ways – in relation to their contexts.

Furthermore, the labour relations produced different types of interaction. For example, the community of fishermen that grew around the Humber was distinct from the types of interaction the Humber afforded to the sailors, traders and merchants, who lived further away from the docks (almost segregated) and their access to imported foodstuff. This occupational divisions of labour shaped residential settlements, but also concentrated the flow of capital. Research by Douglas Massey (2012), which identified ways the organisation of spatial settlements limited the potential for social and spatial mobility of Blacks in the US, may be relevant to Hull. The residential settlements, suggests different population clusters defined in part by labour relations (e.g., fishing/non-fishing community in the Hessle Road area or migrant/asylum seeker/refugee residents in the Spring bank areas). Hull residents also interacted with recent migrants in diverse ways, mediated by the various features of space such as work spaces, food stores or schools, that created opportunities for 'copresence' (Massey, 2005).

5.2.2 Politics of place

In addition to the unique features of place, Massey describes space as being inherently 'political' (1999). Similarly, Lefebvre (1991) recognised power relations (or hegemony) as the complex hierarchical social functions that shaped the (uneven) flow of capital, mobility, the sustainability of and types of infrastructure, processes and practices. In other words, power defined by legal frameworks, systems of regulation, the material quality, size or volume of a feature, which determined the ability of individuals, at different levels, to negotiate different trajectories of experience in place (Sheller & Urry, 2006). Lefebvre (1991: 32) described three interactive levels in the reproduction of relations in capitalist societies namely, the biological reproduction (family unit), the reproduction of labour (working class) and the reproduction of the social relations of production ('ruling' class).

In Hull, respondents related the influence of different power dynamics on their experience of food and food places, which as Bell and Valentine (1997) outlined, spanned the micro (from the body) to macro spatial locations (global sphere).

At the micro-spatial level of the body, the (migrant and non-migrant) study participants reported religious or health restrictions that governed consumption and the navigation of food places. These bodily restrictions created new spaces, practices, identities and regulatory systems that led to new markets with new foods (similar to account of Jewish migrant integration observed by Kershen, 2002). For example, in supermarkets spaces were created to stock 'free-from', 'vegetarian', 'halal' or 'kosher' products; consumers reviewed food labels for acceptable ingredients and used or avoided local places in line with their proscribed restrictions. The potential of the markets and industries to capitalise on these trends was observed by one participant in the photovoice workshop, who pointed out the strategy used to market ginger beer as 'gluten-free' – a cider that would not normally contain any gluten (Figure 4).

> *"…I did think, "Gluten free", it's getting into everything now" – GT3,*
>
> *"There isn't any gluten… it is cider" – GT2*

Figure 5. Gluten-free Ginger beer

Source: Hull Photovoice Collection

Within the home, power was also wielded by different family members who determined what should be eaten, how and when – a theme, which could also reflect the dynamic time-space compression (different forms of power, by different family members, in different time periods). Foods from other settings such as school (particularly for children) or the media 'migrated' into the home and introduced new tastes, new ways of cooking, purchasing habits, foods grown and or met different needs such as convenience. These decisions were made in spite of migrant influences of other family members, including the mother, who was often the main cook.

> *"…Because his father was English and … demanded that his [non-English] mother cooked English" – KS8*

Within the home, the size and configuration of space also constrained practices, particularly for refugee and asylum seeker populations with limited means. The level of interaction in space was also defined by its functionality and the availability of equipment or other materials (Askins & Pain, 2011) that mediated interactions within the space (Figures 6 – 7).

> "*…I like my kitchen (all laugh). It is very big…. And whenever I wake up… I directly go to the kitchen and open everything and just have some air– it makes me feel [like cooking]" – OD2 (Hull, Migrant group)*

Figure 6. The 'Big' Kitchen

Source: Hull Photovoice Collection

"[My kitchen] doesn't have enough room. You can't be [up to] three in the kitchen… apart from the [fact that the] kitchen is small, I like it here [in the UK] because we have got everything… to use in a kitchen. Unlike back home [non- UK], you have to share one pot to do all the meals…" - OD4 (Hull – Migrant group)

Figure 7. The 'Small' Kitchen

Source: Hull Photovoice Collection

Retailers noted the influence of consumers on their services and staff, the types, size, brands and quality of products stocked and or the representation of produce to meet the expressed or perceived needs of their clientele. Business models continually evolved to match the changing demographics. For example, the change in types of items stocked at the Chinese supermarket for

new immigrants from Hong Kong or the development of Lithuanian ready meals by a Latvian store keeper or provision of wholesale stock or larger packaging (for African immigrant families from Italy). Some of these changes were reflected in mainstream stores also, which created spaces for branded immigrant products.

> "*… in terms of migration…first of all it was a more transient town [for] people who just started their lives or students [would] move to Hull, once they have experience they move [out]…Those with larger families, established in school stay longer. For example, we have now had an influx of Italians, Nigerian-Italians who have larger families…[at the food store], has changed from stocking smaller quantities (e.g., 500g) to we now stock larger quantities 4-5kg. They also shop more often…We have also had refugees from Congo and Rwanda …who get a lot of support from the government and large families…we had to get Swahili speaking staff" – KS4*

The power dynamics in the retail spaces was reciprocal. Some food spaces required consumers have certain types knowledge, including language skills to navigate the shops successfully. For example, I visited some shops where almost all the products were labelled in a different language (and had to ask to get a translation or explanation about the foods I was interested in). Another contact, a recent refugee, imported food supplies to avoid navigating the unknown system. In other words, consumers without this formal or informal knowledge – social, language or customs - or the ability to acquire it were denied access.

In a local fish and chip shop, run by a proprietor of mixed identity with evident migrant connections (British born, English speaking, hijab wearing), the growing diversity in the migrant population created a new market for 'Halal' products that was added to the menu:

> *"Yes, things have changed. When we first came it was sort of British only – White British. And over time, obviously more foreigners, ethnic-wise it became more mixed …in an area where you have fish and chips and you have British people, it is a different business to when … [the population] is mixed. Because the neighbourhood has changed, business is mixed – not in a negative way…Before we weren't Halal, before we did pork, the oil that we used was different…We changed the ingredients and everything to Halal so this resulted in a loss in customers … at the start, we were not eating what we were serving [because of religious restrictions] and now that we have changed it [the menu], it appeals to us more" – KR3*

The local authority was responsible for the spatial layout of the city through planning processes that were directly and indirectly influenced by local, national or other interests that included housing, the retail environment, transport and redevelopments. The local authority officers interviewed for the study, worked within the environments and public health departments. Both teams focused on promoting population health with different priorities and remits. The environments team ensured food safety (through regular inspections), investigated food poisonings, exports and other outbreaks (and had a responsibility for housing also) while the public health team, (which was previously based within the National Health Service), worked to build partnerships across the food sector. The move from the national health service into the local authority created new opportunities to work across sectors but also new challenges related to justifying the health benefits of programmes and setting funding priorities.

Local authority income from rents and businesses taxes also indirectly shaped the configuration of the city that determined the set-up of businesses, community programs and site of different developments (including public gardens, community allotments). Structural or regulatory changes could have significant impacts on the retail environment and retailers noted the need for consistent information to maintain profitable businesses. Furthermore, the local generation of income to fund projects sometimes led to difficult decisions. One stakeholder claimed the council was obliged to favour potentially profitable enterprises that indirectly shaped the types or retailers in different spaces (often multinational companies benefitted at the expense of smaller independent stores):

> *"…When planning permission come up for takeaways, they [local authorities] can't refuse…if you take company chains, which come in [names example of chain], they can pay rents, they will pay the rates. They will make a rough looking shop into quite a nice shop…so the council are going to bring [in an] income…at the expense of an independent who is wanting to start…It's a difficult one for the council because they have very tight budgets…" KS7*

In addition, the functions of charitable organisations or programs was dependent on available funding (which was not always assured) or sponsorship of local (food and non-food) industries. The Hull Food Partnership, a coalition of several organisations that included the local public health unit, which advocated for change in the food environment also provided grants or sought funding for programs.

The public health unit also contributed to the regulation of local food environment in collaboration with the planning unit through zoning laws that limited applications for new takeaways within certain radius of schools. This regulation was based on national evidence that linked childhood obesity rates to the density of takeaway outlets (although causality in Hull had not been established). The public health officers acknowledged the growth of virtual/online delivery services (a new flow or intersection and different representational space) that subverted this regulation. This acknowledgement of the emergence of virtual takeaway spaces confirm Massey's (2005) observation on the need to identify and understand local challenges, formed from the interaction of components in local spaces that may be distinct from interactions at the national level i.e., applying evidence based on "unsubstantiated" connections at the national level could create or embed uneven patterns where distinct social interactions were at play (Massey, 2005: 27).

Charitable food schemes (food banks, pantries) were regulated by internal processes that required beneficiaries to present a voucher from a statutory body or other form of 'means-tested' evidence. Although distribution aimed to be fair, some study participants reported unequal experiences. Furthermore, diverse experiences were also introduced through mainstream or statutory sources such as FareShare, a food distributor. New guidelines to restrict the choice of food supply meant that the staff and the residents who used these schemes were introduced to new foods (i.e., organisations had to take whatever the distribution chain offered, where previously an order was made from a list of available items). A charitable food supplier observed:

> *"…We get more fruit and vegetables from different backgrounds now. Particularly we had …, it looked like a giant caterpillar and it was really dark and it was African and the African lady came in and said 'it is like crisps', she explained… that you cut it really fine and can fry it like crisps. I want to say 'cavassa' [cassava] - that's it, cassava! I have never seen one before in me life, I took a photo and asked on twitter "can anyone tell me what this is"? …And when we get stuff that Eastern Europeans favour, we can ask them …and we can feed that back to anybody else that wants it, cos I think that everybody should have a try of it whether they like it or not, … And then we would maybe print off different recipes …" – KS5*

Power operated at many different levels in the Hull food environment creating various types of intersections with different actors and (sometimes) different commodities. National and regional

policies determined the focus of local efforts – shaping the people, infrastructure and practices involved - sometimes independent of the local context

There was also resistance to the power or authority structures, which generated new forms of interaction that led to subverted practices. Furthermore, shocks such as Brexit and the COVID pandemic re-wired interactions within the food system, restricting on one hand, imports, patterns of distribution, access and consumption and facilitating on the other hand, rapid collaboration (between agencies), access to funding and other resources.

5.2.3 Multiplicity of place

Both Lefebvre and Massey acknowledge place as the product of interrelations; the "existence of plurality" (Massey, 1999:2) or the "introduction of new ideas" (Lefebvre, 1999; 27). Place as a node, encompasses many intersections creating a complex network, a feature of the everyday 'throwntogetherness', described by Massey (2005), which may be obvious or obscure (Lefebvre, 1991). As a node, place combines multiple time-space compressions that exist in the 'here and now' and are also simultaneously in the process of 'becoming'. The recognition of various types of difference allows a "coeval" experience; a plurality that generates novel opportunities and also a potential for conflict (Massey, 1999).

In Hull, the multiplicity of different interactions – of people, ideas and things - including the super-diversity of internal and international migrant journeys; the routes and patterns of settlement informed services and shaped the city. The types of migrants - seamen, workers, students, asylum seekers and refugees, travellers (facilitated by the policy of free-movement, prior to Brexit); their destinations or place of origin, role and location in the city and size of the migrant unit (i.e., single person, family, group etc) also determined their patterns of settlement and influence in the city. Migrants – both internal-UK and international - who were older or with their families tended to settle in the city; while others moved outside Hull to larger cities, once established (KR4).

These movements, including the internal displacement of Hull-born residents from the fishing community, influenced the food environment, which was evident in the location and set-up of various food establishments and charitable organisations. The food establishments included food stores, bakeries, restaurants, takeaways and butchers that provided foods, from different countries, processed in various ways to a range of clients and were clustered in different areas. Main-stream supermarkets and other 'local' places such as the pubs or Hull Trinity Market also introduced new

products (brands or 'street' foods). The movements created (new) spaces, displacements, opportunities for contact and levels of interactions that sometimes shifted the power dynamics and led to conflict.

> *"We have had a number of people coming in – the first people were cadets, actually military officers on their way to Sandhurst …and then we got whole waves of people coming in, the EU expansion and all that and there was some tension mainly among young people… feeling that these people were living on their territories, their girls…and there were episodes of violence. The instability in the East caused more people to settle here and that was both before and after the EU expansion and… so there have been several waves come in and now regrettably we seem to see (I say regrettably…), lots of shops with foreign names, foreign people…" - KP3*

> *"…The City has changed, the population has changed, the food offering, the whole make-up of the ethnicity of the city has changed. It has changed massively so certain streets … reflect different views …such as Springbank, Princes Avenue, Newland Avenue, Beverly Road perhaps and even very, very traditional working class areas of Hull, [namely] Hessle Road and Holderness Road, you will find [on] there, Kurdish restaurants and Greek restaurants, African shops, food shops, clothing shops, hairdressers and lots of what we would call 'international' shops… mini-marts with the Deli inside… also the Polish [shop], one specially [for] Romanian food, Moldovan food…Latvian, Lithuanian and some of them have a wide range of products, some of them sell Halal …[example of ethnic store] have been there for 15 years or more, strong businesses…" – KS2*

> *"A difference between the groups. Down Springbank, the restaurants is very much male orientated…, single males. You don't see the families, you don't see the children or wives, I don't think they exist in this country whereas the Polish restaurants, there's one, two, three restaurants, it's a family. Polish people, you see them in Pizza Hut, KFCs, Nandos and things like that…" – KS2*

Furthermore, there were also multiple identities – some formed through intermarriage; identities which participants negotiated easily, even during conversations (referring to 'them' and 'us' to distinguish positions). The multiplicity of identity also reflected ways of knowing – knowledge, also being a form of power – that was used to access spaces and values associated with foods, modes

of preparation and food places. This knowledge determined choices such as the preference for 'ethnic food' or the use of the local shops.

In Hull, the intersection of multiple mobilities, contexts and identities extended the 'boundaries' of Hull beyond the local (to comprise the global) that produced various experiences and shaped the 'local' food environment.

5.2.4 Representation of Space

Lefebvre describes the representations of space as 'conceived' or mental space that is associated with the relations of production. Through knowledge, codes and symbols, space enforces structure or organisation (1991: 33) designed to establish social relations and manage or direct the expression of spatial practices.

In Hull, the representations of space included the location (in the centre/outskirts), availability of seating, opening times, décor, family-friendly policies, pricing and payment mechanisms, eligibility for food aid, packaging style, types of labels, product information (menu or notice about the use of genetically modified products), ability to 'take food away', store layout and customer service.

The representations of space determined, in part, the level of interaction, which excluded those who could not 'engage' or navigate the representation of space. Some of the migrants reported repeated experiences of 'unwelcoming' staff attitude which discouraged further interaction in those spaces as highlighted in the following example:

> *"…But is it the welcoming or people were not friendly or is it that they were racist or you know? they just looked at me one way and then I felt like, you know, maybe it's not for me … there are times that you get those people… I came and then I said 'good morning'…people are standing there, nobody is giving me attention. But you know, those people are just busy doing their thing… But I'm standing there for like five minutes…" – OD6 (Migrant Photovoice)*

Another participant reported challenges in using a preferred payment format that discouraged further use.

> *"I just wanted something quick [and ordered a delivery] … when they came, I thought I could pay with the card but they don't pay with a card. So, we had a bit of a… a bit of a… challenge?" – OD5 (Migrant Photovoice)*

The city layout, which determined the location and available infrastructure also contributed to the representation of space and the ability of users to navigate the system. There were references to public spaces set aside (in the past) by the local council for allotments, fruit trees or herb/vegetable patches that were no longer available or maintained due to funding pressures. The planning of non-food places also influenced individual practices. A study participant's photograph titled 'the long road' (Figure 8), highlighted the difficulty of getting to a popular food store without access to a car or other public transport. This lack of transport (and distance from the main town) limited the shopping experience.

> *"…every time we go shopping [with friends] … we are very happy [we all] think the same thing, uh, what we [are] going to buy. And then when we come back, we always complain that [we should not have bought] so many things because you see the road? It is long[er] than this to go to the [named store], it's very far…Yes, it's very far. And then our hands feel [ing] very tired, every time my friends complain…because of the distance" – OD2 (Migrant Photovoice).*
>
> *[So, you wish had a car?] "…Or maybe if they can put one shop [nearby?] so that they don't have to walk again" – OD4 (Migrant Photovoice).*

Figure 8. 'The Long Road'

Source: Hull Photovoice Collection

Within the home, the structure and presentation of meals also defined the level of interaction. Non-migrants, who reported enjoying ethnic meals in the homes of their migrant friends, workers or neighbours, commented on the sociability of the eating event, the care and effort put into the preparation and presentation of meals. While the exposure to other foods did not result in

adoption of the food by the consumer (also reported by others in other contexts, such as feasts, or food as gifts), the convivial nature of the meal was frequently recalled and commented on. An example of how the structure and presentation of a meal defined the associated practice was aptly described by a study participant's photograph of traditional food, which was taken to emphasise the communal setting:

> *"This one is traditional food of Ethiopia – traditional. This one we eat with group. Not just for one [person], maybe for five people… It is healthy (describes the foods) … the other [is] soup and some chilli with eggs …and you have to make chicken – 12 [pieces]… That is my special meal …we eat together for five (or) four people, we can eat together around [the table] …" – GT5 (Hull, Mixed Photovoice)*

Figure 9. The Ethiopian Meal

Source: Hull Photovoice Collection

In contrast, the presentation of packed sandwiches, to replace the usual buffet due to COVID, limited the shared features of the meal as represented by the space (packaging) – Figure 10.

> *"This is the banqueting hall of the Guild Hall of the Council offices. This is part of the reception area and they are brown paper packages. Each of which contained a sandwich. You had a list of eight possible sandwiches. Now normally there is plateful of sandwiches. But in the time of COVID, everything is packed"– GT1 (Mixed photovoice)*

Figure 10. COVID Banquet

Source: Hull Photovoice Collection

This section demonstrated the complex and multiple ways representations of space could be associated with different levels of interaction and practices. The representations of space were abstract (Lefebvre, 1991) and included food-related and non-food related spaces that sketched out the 'maps of power' (Massey, 2005). In Hull, these 'maps' or 'representations of space' determined the depth and pattern of interactions within the place; it also defined the boundaries of exclusion. In Hull, migration has created new representations of space and rules of engagement across different spheres – from the private to the public spheres; the plan, layout and experience of places (including virtual and non-food spaces) had an impact on individual food practices.

5.2.5 Representational space

Lefebvre's third conceptual triad is representational space. It describes the embodied - overt or covert - symbols that 'transgress' the preconditions associated with (social) interactions in space (i.e., not ordered like the representations of space). The signs are culturally or socially created constructs, "conceived representations" that communicate and store discursive markers of distinction (Fuchs 2019), which can subvert the dominant hegemony. This concept could be linked to Massey's (1999) discussions of place as a disruption that allows the potential production of new relations, trajectories, identities and stories.

Several representational spaces were referred to during the study and included the home (as a place to practice healthy eating), kitchen space/equipment (as a facilitator for cooking at home), gardens (aesthetic value, recreating memories or a source of self-sufficiency), eating out or new foods (as an opportunity to experience other cultures, to have a treat, save time, maintain relationships or for convenience; eating unfamiliar foods also raised fears of food poisoning, allergic reactions and violating religious restrictions).

Other representational spaces included the (virtual places of) Fairtrade goods (at a good price that was a choice for the 'worker and the environment'), free range (or 'natural' foods as good quality in contrast to mass-produced foods), the presentation of foods (representing specific memories of taste or cultural values) and religious organisations doing charitable food work (as friendly places).

To further illustrate representational spaces in Hull, I shall discuss three examples – ethnic enterprises, ethnic food and "healthy" food in the following section.

Ethnic enterprises: The enterprises included shops and restaurants targeted specific migrant (ethnic) groups or enhanced access for certain groups through recognisable symbols that allowed creativity, conveyed significant meanings or included the use of language (verbal greeting, store signage to signify 'halal', food labels), colours of a flag, patterns of display (e.g., fruit/vegetable display), decorations, menu/staff presentations, dress, taste and music.

The symbols were overt (such as 24-hour opening) or obscure (such as the halal signage or retail space for international calling cards). The symbols served as an 'invisible' boundary for demarcating or reinforcing relationships, empowering those with tacit knowledge. These subtle symbols, marked in part by the services provided, helped to define the scope of the market (and types/levels of interaction), which could be adapted. For 'un-knowledgeable' customers, the symbols were either ignored, avoided or a source of displacement and misunderstanding. For example, a participant reportedly avoided 'halal' stores for ethical reasons (i.e., associated 'halal' with inhumane animal slaughter). Where required, effort was made to 'translate' the symbols to 'normalise' the consumer experience.

An ethnic store manager, (who spoke English, Russian, Latvian and Lithuanian) clarified further:

> *"We do have English people, but they are 'one-time customers' [who] want something small so we are not targeting those since most of the English people go into the big stores … we are basically targeting the Eastern European because they know what we can provide, what they can find in our stores. We are providing Lithuanian needs, targeting Latvian…We are*

targeting Romanian, there is a lot of Romanian in this city…basically Romanians are very particular, if they don't find what they are looking for, they will not take anything else. I am not sure why they don't like Lithuanians…when we had a Spanish customer [using a translator via his mobile phone] we found what he needed and he went away happy" – KR7

Figure 11 shows a picture taken by a workshop participant of an international store to highlight the accessibility of the store. The store also included a 'halal' sign, an extension of fresh fruit/vegetable display to the pavement (which one of the public health officers observed as a positive development) and provided culturally acceptable products at a high price.

"This is Berkhal International market, it is found in Springbank. What I love from this shop is that it's open 24 hours. Its 24 hours. I never knew that but my friend told me…"it is never closed" …the other shops, they close very early so I go there and it's near our home. [Most international shops they are expensive] …yes, because of the [countries] that they import from …"- OD1 (Migrant group)

"Most fruits are expensive ….: I have been to one [name] shop in London…, you can get the things that we use back in our country but they are a bit more expensive" – OD5 (Migrant group)

Figure 11. The 24-hour supermarket

Source: Hull Photovoice collection

Commodities in ethnic stores were also considered relatively expensive because the goods were imported. However, the target customers generally had a relatively greater disposable income and willingness to pay (than they might have had in the home country; "salaries are three times bigger here…" – KR7). In a way, the ethnic stores served as a form of place-making 'emplacing' or

reproducing experiences in a different environment, a process which Massey (2005) also referred to as sedimentation.

Ethnic food: Representational space allowed retailers to 'transgress' the boundaries, create new or hybrid spaces and or products in an "appetizing cultural space" (Krishnendu 2016: 92 quoting Cho, 2010). As noted in the preceding section, 'ethnic foods' were commodities, which conveyed specific meaning. The presentation and content of ethnic food were sometimes adapted to suit consumer tastes or the context of production (where substitute ingredients were used). Some of these adaptive practices, such as adding fish and chips to the menu of in an 'ethnic' restaurant, were described as "inauthentic' by some study participants.

Furthermore, ethnic foods were often associated with a nostalgia that provided an opportunity for consumers to attach bespoke meanings to their experience. The following are descriptions of traditional British 'ethnic' food captured by two different participants at a photovoice workshop. The participants captured different emotions and experiences framed within the scope and rhythms of their interaction (i.e., habitual or occasional). For one participant, consuming fish and chips as a representation of British food was a habit, while for the other participant, the British dinner (beef, gravy with Yorkshire pudding) was an opportunity to experience, the food, culture and the way of life presented by the meal; for both participants it reinforced a sense of identity.

> *"For about nearly the last 37 years, if I have the opportunity to go to a certain chip shop, I go to Smithys on Beverley Road, next to what used to be the Bull Pub and almost by the School… that is an old sign and it used to stand on the forecourt …. It sums up what I think. It is British traditional food, with the Union Jack… It is possibly my favourite chippy and the proprietor and his wife are very pleasant people…." – GT1 (Hull, Mixed Photovoice)*

Figure 12. "Que sera, sera"

Source: Hull Photovoice collection

" It is one of British traditional foods and the first reason I wanted to share it with you because it was new for me… my friends who are British [introduced] me to foods from the British culture… (at) the same time, I think I do enjoy it because, first [its] from a different culture and at the same time, I wasn't expecting that to be delicious like that. I mean, it's [an] emotional thing from them and background thing from them, …[I thought it was] time for me to try [the meal] and I could have my own opinion…it was a bit challenging thing to try a new thing you never tried, and on the way you realise how much people bring in your life … never realise people could have something nice from their culture. So, in my culture they say "If you never go in neighbour's house, you will just think it's only your Mum that has the nice cooker [cooking] or cook[s] the best dishes… "It's (a) two-way street. I learn from you; you learn from me – GT4 (Hull, Mixed Photovoice)

Figure 13. 'In my neighbour's house'

Source: Hull Photovoice collection

'Healthy food': Not all foods were described as healthy or were consumed because they were 'healthy'. During the study, participants described 'healthy' food as food with 'no fat', foods where greater control could be exercised in the process of preparation to ensure food safety and hygiene such as 'home cooked' food. One (migrant) participant also referred to healthy eating as eating the 'British' way – a possible reference to the UK Eat Well guide.

> "… [explaining more about the fish and chips at local takeaway in response to question about its healthiness [it is fried] in animal fat, all the wrong stuff, but oh how delicious [GT5: delicious, but you think it's healthy?). Oh, no, no, no. Fish and chips have never been healthy. But they have always been popular!" – GT1

Another example of representational space was a picture of milk bottles taken at a local store as part of the photovoice workshop with a group of migrants. Milk was considered a product with various uses that could be obtained by milking cattle and processed into other foods, such a yoghurt. However, the experience of store-bought milk, pictured in pristine translucent plastic bottles raised significant debate about the quality of the milk, particularly the safety and hygiene associated with the practice of milking cows, since it did not have similar qualities to the known (pre-migration) experience. This photograph, discussed again during the exhibition, showed how emplaced knowledge, (i.e., knowledge gained in different places) shaped the consumer's understanding, practice and experience.

> *"At our home we use this milk a lot. What I know [is different from] what they are telling me, that this is cow milk? …Back at home [Non-UK] …when you put it [cow's milk] in the cup at home and you put it outside, not in the fridge, when you wake up in the morning it is not milk anymore - it's yoghurt but this milk does not do that. So, I don't know how do they make that – is it 100% pure milk or they put some chemicals or stuffs? And ours [Non-UK country] has always got the cream on top [yes] but this one you don't find no cream…you can keep it outside for three days, even five days and it does not get spoilt…" - OD3 (Hull, Migrant Photovoice)*

Figure 14. 'Pure milk?'

Source: Hull Photovoice collection

Unlike the explanation given by the local council's environment officer at the exhibition event about the processes and regulations used to assure the quality and safety of milk (dialogue during the exhibition); the migrants based their assessment of quality on their lived experience of milking cattle and using milk as an ingredient, (which Lefebvre, 1991 referred to as 'performance' and 'capabilities'). The migrants' experience and knowledge of milk was displaced in a new setting (and replaced by technologies and regulations). Paradoxically the technological measures, meant to assure safety, led to distrust.

These examples illustrated the re(production) of social space, which is a process that required "competence" and "performance"; capabilities that allowed space to be lived before it is conceptualised (Lefebvre, 1991). The illustrations from Hull demonstrate how power expressed in knowledge was negotiated through the interaction with difference. The multiple meanings attached to the same representational spaces (re) produced new spaces or understandings i.e., 'old' knowledge was applied in 'new' places and vice versa; it also produced conflict, an inevitable outcome of multiplicity.

5.2.6 Spatial Practices

Lefebvre (1991) described spatial practices as the "work" of the two sets of relations – production and reproduction - which embodied the competence, performance and dominance of actors (as individuals or collectives) in the production of space (Lefebvre, 1991: 75-79).

In Hull, a range of spatial practices were discussed at different levels by stakeholders, retailers and residents. These included eating, cooking, foraging and growing food (home or communal gardens), provisioning, regulating food supply and managing food waste. These practices were associated with different representations of space (including lived or imagined spaces), meanings and values and were context –dependent. In addition, there were different rhythms associated with the practices, some practices were habitual and performed consistently with great capability and associated depth of meaning (such as cooking at home, going for the "Friday chippie" 'or the "Sunday roast"); other practices were irregular with transient connections (eating out, foraging or entertaining).

Variation in spatial practices highlighted differential "flows and interconnections", each with unique associations to "differentiated mobility" and constructed "immobility" in places (Massey 2005:149; also, Sheller & Urry 2006). For example, the 'charitable' supply of foodstuff by the supermarkets to the growing number of charitable centres (food banks/food pantries), potentially re-distributed the flows (and arguably the shape) of capital (quantity, quality and types of available food resources). This re-distribution reduced the number and variety of marked-down goods available to the "bargain hunters" (KP3); indirectly (re)shaping the representation of space, representational space and spatial practices of individuals. These everyday practices were woven into the on-going production of local food spaces.

'Cooking at home', was another complex practice explored by study participants that was described as a "labour of love" (KS8) because of the time, knowledge and skill involved. The home was a site that reflected a multiplicity of interactions: what was cooked, when, and by whom, under what circumstances varied across the study sample. In general, cooking at home seemed synonymous with eating well or "cooking from scratch" with "fresh ingredients" and depended on having suitable equipment (including fuel), skills, knowledge, time and "confidence". It was also a practice that required monetary capital, particularly where the preferred food was not readily available (limiting access) or where a decision needed to be made between heating or cooking with the available fuel (gas/electricity).

> *"…I came alone [to Hull] as a single guy…you know in London [previous location], you can get your local dishes, you buy, you come home and you cook…it was just like home [non-UK country]. When we moved to Hull, things changed, the foreigners were not much…that time we eat potatoes, because we can't get the local dish we are used to. So, we try to eat*

like the English people – their fish and chips … [but now with increased diversity in Hull], the potato business is over because now you can get whatever you want". – KP5

Cooking at home provided opportunities for different members of the family to participate and (particularly) for younger members to learn skills – many of the respondents with a migrant background referred to skills learned in early childhood, usually from a mother – practices that they were keen to pass unto their own offspring. This practice, was one which most of the stakeholders and some of the non-migrant participants attributed to migrants – to their attitude, a commitment to eating and enjoying food together and lamented as a 'lost skill' in the British population who do not make time to cook together. An example of this attribution was alluded to by a photovoice participant although this was not always the case as cooking practices were context dependent (as seen in the previous quote of a migrant):

"I love having time with my little girl, we make our bread all from scratch and she absolutely loves it… As a family, you can make anything together. A lot of different cultures they introduce a whole array of meals. The whole family gets together to cook, all together … they start from making the chutneys while they are making this big curry and even [get] the chapattis…all of them [working] together, enjoying being together …I think that is what a lot of people forget [a lot of people say:], '…I have got to feed the kids in an hour. I have got no time… think that's sad that we are losing out on things like that and I think that the supermarkets have kind of encouraged that. Everything comes in a packet and you…throw it all together…problem solved! I think we just need a bit more education on how to feed ourselves. And a lot of people don't … [have that education] "- GT3 (Hull, Mixed Photovoice)

Lefebvre (1991) urged greater attention to spatial practices, which point to complex interactions, layers and networks that are only comprehensible in retrospect. Massey (1999:11) also argued that a relational view of space should not be based on 'pre-constituted' identities but should rather explore the social construction of identities, revealed through the 'maps of power'.

Although some practices appeared to have an underlying cultural explanation, a closer exploration underscored how resources combined with contexts to shape practices. This was evident in the accounts of the study participants in Hull, where a range of factors, including dominance of the mainstream supermarkets (which comprised food and non-food items in one place), the value of

time, the convenience of pre-processed and processed foods, beliefs and concerns about health or existing health conditions shaped individual and household consumption practices – independent of migrant or cultural background.

5.3 Hackney, Borough of London

The case study in Hackney involved interviews with officers from the local council (strategic policy, markets, public health and environmental health units), stakeholders from civil society groups representing some of the more established migrant communities (South Asian, Turkish, Jewish), food organisations and residents. Many of the residents and stakeholders had lived in Hackney all their lives. I also interviewed Neil Martinson, a renowned Hackney photographer, who has documented changes in the area from the 1950s. In addition, were three photovoice workshops in Hackney comprising a mother-toddler group, young chefs in training (all young men) and a group of migrant women.

5.3.1 Place as an active agent in the reproduction of place

For centuries Hackney, has served as a hub of activity because of its cheap rents and available social housing and relative proximity (via good transport links) to the city of London and the Docks. Immigrants to Hackney have comprised German and Dutch fruit and vegetable gardeners in the 1500s (when then Hackney comprised of fertile arable land), the ayahs and lascars from the Indian continent in the 1700s (returning with English colonisers/voyagers), the Commonwealth migrants who provided cheap labour to manufacturing industries, and the many refugees fleeing various forms of conflict, notably the Jewish community but also the Turkish and Vietnamese settlers (Hackney Archives – exhibition viewed 2021).

Neil Martinson, whose photographs have documented changes in Hackney from the 1950s, noted how cheap rents in Hackney attracted new immigrants particularly at a time when unemployment rates were high; these arrivals diversified the local Ridley Road market:

> *"Hackney was struggling in those times, high unemployment, run down estates and empty houses…it was a cheap place to live. [in the 1970s] Ridley Road market…became more culturally diverse" – Neil Martinson*

The marketplace reflected the intersection between the 'flow of capital', the diversity of the resident population and types of living spaces (mainly social housing that attracted people of a

similar social class). The marketplace comprised of retail spaces, restaurants and takeaways that developed to support specific ethnic communities and provided opportunities for cultural exchange, resulting in new food places, tastes and experiences.

> *"…Around Stamford Hill and Upper Clapton [is]…one of the longest running food businesses… [that caters] has been selling Kosher food since 1948…Other areas in the Hackney…have also provided a focus for other ethnic groups. For example, in Stoke Newington Road and Kingsland High Street, there is a concentration of Turkish run food businesses. In Shoreditch, there are many Vietnamese restaurants…Ridley Road is a long running outdoor market in Hackney, which started in the 1880s. This market has sold food to satisfy the needs of successive waves of immigrants. For example, Jewish, West Indian, African, etc… [of the changes], I think it was a combination of wealthier people living in that part of Hackney …and ethnic minorities seeing …an opportunity to set up potentially successful businesses as well" – HS6*

> *"[In the 1970s] Most cafes in Hackney were still greasy spoons run, it seemed, by ancient ladies wearing pinnies (aprons)…they all tended to serve the same type of food, fry up in the morning for breakfast…lunch was often boiled cabbage and potatoes with a chop or Shepherd's pie. But where they excelled was the pudding department…It was in the late 70s and 80s when it really started to change…Along the High Street, the world came out to Hackney as Chinese, Turkish, Greek, Italian, Caribbean, French cafes and restaurants opened up" – Neil Marston*

The level of poverty across the local area also created a sense of community, that may partly be attributed to the layout and types of housing where residents, often living in overcrowded conditions had to share basic amenities, such as kitchens. Housing redevelopment and other regeneration activities, prompted by the extension of London's extensive transport system (Lagadic, 2019) and the London Olympics have led to the gentrification of Hackney, creating new spaces. Food places in Hackney have evolved with the changing needs of the population and its infrastructure.

> *"…a lot of people who are relatively well off have moved into the area. And that is why some parts…have changed so much…people who have money to spend on their houses and have money for going out to eat as well…" – HS6*

5.3.2 Politics of place

According to Massey's argument, both place and mobility, are essentially processes, (re)produced through the interaction of everyday activities (Lefebvre, 1991) – however these processes are not equally experienced by those sharing the same time-space compression as the ability to move by some, could restrict the movements of others. Cresswell's reflections (2010) on the complex interaction between places and mobilities, noted how mobility could be differentially accessed based on the reason, speed, regularity, route, experience of and the resistance to movement. In Hackney, the size, needs and potential opportunities of different populations have been dominated by the unequal flow of capital.

The Hackney local council identified gaps in access for its different migrant groups through various units (Public Health and Policy Units) in various reports such as its Joint Service Needs Assessment (JSNA, 2018). It also set up programs to mitigate the negative impacts of inequalities through funding or other schemes provided directly to vulnerable residents (such as investment in the Alexander Rose vouchers) or coordinated via the numerous third sector organisations in Hackney (coordinated by the Hackney Food Poverty Alliance). The Hackney Markets unit, also actively monitored and implemented market strategies through daily interactions with retailers to ensure adequate provision for its target populations. These initiatives occurred within a broader framework of other changes that have impacted the local area.

National, regional and local government policies on transport, housing, markets, foods standards and other developments, such as disruptions caused by COVID or Brexit, have also directly and indirectly impacted people's experiences of places. The impact of these policies created barriers to access for local residents whose needs were undermined by the regulations.

> "I *think for some people the restrictions on car use, on roads being accessible by car, has proven challenging. Because people have a lot of obligations, people have big families and time is of the essence in order to do everything that one has to do. And if one doesn't have access for one's vehicle, that can be difficult" – HS10*

In addition, different spaces exposed different types of interactions and vulnerabilities. For example, a charitable food provider (who planned to provide a type of retail service) explained how the idea for the charitable business was formed from observing the shame and disempowerment associated with using food banks.

"I think COVID highlighted the gaps that were already there and I have said previously that you know- there was food poverty before COVID, there was people on very low incomes, people in isolation and erm you know if you think back to a typical food bank… they tend to [attract] certain clientele of certain group (hesitation). You know…things are changing slightly…it's not just typically White British people who use food banks [describing those who used the food services] …I would say that people with long-term health conditions, people who have come out of [employment]; people (for whom) support services are not there anymore and there is some people who haven't been able to leave their house. I think, I think one thing to add to that is that what is very important to me personally is the shame around asking for help. I saw quite a few services where …the way some people were responded to, I wasn't comfortable with it. I think even in our hour of need … people should still have dignity – HR1

In addition, the size of some migrant groups in Hackney meant that they had the 'power' to command a 'presence' in the market with visible ethnic enterprises in areas where there was a high density of migrants of a specific ethnic background. For example in Hackney, where there is a large Jewish settlement (particularly of ultra-conservative in the Stamford Hill area), there are local enterprises designed to meet the religious restrictions for this group.

The market opportunity was also exploited by some of the mainstream supermarkets nearby, which adapted to meet the demands of the Jewish population by employing a Rabbi to provide advice on foods to stock or reviewed patterns of service delivery to match the rhythms of the Jewish Shabbat. However, there was not a similar approach in the provision of hospital foods, which was highlighted as a major gap during COVID by a local Jewish voluntary organisation.

"…Kosher food is not just 'Jewish food'…it is a central aspect of our religion…One needs to have a lot of products made under Rabbinic supervision, [to ensure] that … nothing is used in the production which makes the food, non-kosher, to be prohibited" – HS10

In addition to the size of different populations, the spending power was also an important consideration in the shaping local places. Places in Hackney, such as Broadway market or "trendy cafes" by their design, décor and price range appealed to certain types of consumers, inadvertently excluding others. Hackney residents referred to these spaces as spaces they "passed" through, or for the "hipster" generation, a place to "people watch" but not to use because of the associated

cost. The Hackney Markets officer acknowledged that this feature of Broadway was part of the marketing strategy, i.e., Broadway was designed to attract tourists from outside Hackney and hence, was more expensive. One participant summed this up aptly:

> *"…you know in Broadway market, you pay for the place you do not pay for the food. Because it is famous…It's only a category of people that go there. The proper Hackney person, they don't go there…" XN5 (Hackney, Migrant Photovoice)*

Increased knowledge of and demand for foods with known health, cultural or other values, increased the price (i.e., commodification of cultural foods) but reduced access for migrants or those with a migrant background with that knowledge that had previously enjoyed access (i.e., the combination of new knowledge and capital shifted the power of access).

5.3.3 Multiplicity/openness of place

The diversity of Hackney is a part of its legacy that is celebrated and remains an important feature in its planning and development at the local level. For example, the Markets unit structured the various markets in Hackney to match the (changing) consumer demography; public health interventions were targeted at specific populations defined by a range of demographic criteria including the migrant status of its residents.

In Hackney, multiplicity was defined in different ways. Study participants often negotiated different forms of identity in the choice of food places, which intersected across various 'loci' including their own, parental and or a partner's ethnic, racial or migrant background. Reference was also made to age, gender, physical and mental (dis)ability, parental responsibility, generation, class or social status, original country of origin, length of stay in Hackney, experience of living in non-UK location, religious affiliation, place of birth, nationality, and working or non-working status. These forms of individual and community identity, which included mixed and hybrid identities, were used to address different needs and to navigate different spaces using a range of resources (such as knowledge, community or personal relationships, language, skills) that led to various outcomes. Moreover, identity was not static and changed in meaning, value and importance, influenced by the context in that time-space compression.

The interview with representatives from the Chinese Community Centre illustrated the complexity of changing and multiple identities with a migrant population across generations. The centre,

located close to the Hackney Council offices organised activities for the community that comprised a range of nationalities including Vietnamese, Chinese, Malaysian, Indonesian. At the time, which was shortly after the first wave of COVID, racial abuse and violence had (suddenly) increased the visibility of (and potential threat to) the Chinese or South-East Asians who were targeted (the interviewee stressed the latter term that repeatedly emphasised the shared identity) because of the reported source of the virus. Although the greater risk of violence was acknowledged for the community as a whole, the 'elders' were considered particularly vulnerable. These elders, often first-generation migrants who had limited English language skills, had retained their pre-migrant consumption practices even though they had been resident in Hackney area for many years. Their practices were different from the 'British Born Chinese' also known as the 'BBC' who had adopted Western practices (such as having soda with their meals), acknowledged their 'inability to cook' (or rather lacked the confidence, knowledge and skills) traditional 'ethnic foods' and had experience of cooking and eating other foods.

Hackney is also renowned for its food diversity. In small retail stores across the region, a display of various seasonal worldwide foods supported consumer choice, perceived quality, values and health needs. The features of some ethnic retail spaces also facilitated multiple forms of access, such as translation, language skills, haptic interaction with produce, special requests, delivery services, (informal) crèche services, shopping support (e.g., help to carry baskets for elderly persons) and [informal] debit/credit facilities. Some of the retail stores (both ethnic and mainstream) had a regional and international reputation, which increased demand but raised the price for residents. One participant even joked saying:

> *"So, the good thing about Hackney and London is that you can find anything…you know, I went to this shop [describing photo] and they had…really everything. But sometimes, you need to leave your kidney [laughter]". –XN4 (Hackney, Migrant photovoice).*

Figure 15. Local diversity

Source: Hackney photovoice Collection

5.3.4 Representation of space

The representation of spaces is ordered or organised according to regulations that determine what, when and how they operate, to whom and under what circumstances. These spaces can signify co-existence, cohesiveness, and overt and covert representations (Lefebvre, 1991), which can lead to displacement (Lefebvre, 1991: 30) and or conflict (Massey, 2005). The Hackney representations of food spaces included markets, supermarkets and allotments, restaurants, home spaces, public parks, 'ethnic' takeaways, gardens and pubs.

The Hackney markets have changed over time, serving different communities within and outside Hackney; adapting opening times, trading rules and marketing strategies [Example of Ridley Road Market, Figure 16]. The retail sector in Hackney has evolved with its changing demography that has re(produced) the flows of capital transformed by the economic, political, demographic, housing and transport sectors. It has transformed from the 'greasy spoon' cafés and small independent food stores in the 1970s, to ethnic restaurants that commodified ethnic foods in the 1980s, and the establishment of large supermarket chains. With the gentrification of the Borough, there has been a proliferation of independent cafés and health food stores.

Figure 16. Ridley Road Market

Source: Hackney Photovoice Collection

The different spaces allowed for distinct types of social interaction and consumer experience. For example, in large mainstream stores traffic controlled by the order of the aisles, the organisation of food stocks, payment and use of surveillance systems indirectly regulated spatial practices. In contrast, the open markets favoured direct interaction with the retailer (the opportunity to haggle), promoted individual choice and discounts and space to sit, watch or wander leisurely.

The following reflections by study participants showed how the different representations of space regulated their own food and non-food practices.

> *"…Broadway market for example…it is a trendy place…it has five coffee shops on it…those types of health foods, restaurants…there is a lot I want to say about it…but like the price of it would put me off. Because I like coffee and I like health foods and they make it so expensive…it's not something you can do every day… It is for a specific audience and I feel it is not the general public. Its (for) people who can afford to do that…" OTB (Hackney, Trainee photovoice)*

> *"This is Hackney [open market [referring to the picture– Figure 17] …I always bought… fruit, fresh and quality and I choose what I want, it is easy to find [what] I want…not like supermarket. [where], I buy more [than] I need [because of the packaging] … [but in the open market] you can touch, you can turn (demonstrates), I choose what I like… every time I choose five lemons and [for] £1. I choose quality and fresh and hard and big. Sometimes I like lemons to have some green because I want to take [it] to my house to … [keep for longer] … Sometimes I take what I want and go home, sometimes I sit with the phone, I speak with my family and friends, I just take a rest… I like to see the people go and*

come…especially [when] I am bored…I buy vegetables and fruits and sit if the sun is shining, sometimes I come in the rain (laughter). I like it, I see people. It's a joy to see people go and come, especially [as] I don't have any family here"- XN3 (Hackney, Migrant group

Figure 17. The Open Market

Source: Hackney photovoice Collection

5.3.5 Representational space

Study participants associated different values with food spaces linked to the representation of space (access, price, types of knowledge required, variety, price, taste, perceived quality); or associated with a specific context that defined the experience. For example, the convenience of the 'JustEat' app, the stigma/shame associated with use of charitable food donations, health or aesthetic, nutritional or health value of imported ethnic food, the provision of 'culturally appropriate' foods to vulnerable people during COVID, generational eating habits linked to different times/spaces; perceived safety of Kosher food by non- Jews, the need for institutional accountability and the availability of a toilet when shopping with children. It also included the diverse uses of space at different times (i.e., there was a different 'traffic' in local areas depending on the time of the day and or week). Hence, the same space (re)produced different meanings and practices that had the potential to include or exclude actors.

The practice of growing food was represented in various ways by the photovoice participants. These representations had different meanings that underlined important everyday values (e.g., aesthetic, nutritional, mental and community health values, the perception of natural, chemical-

free, fresh, good quality food). In addition, participants referred to the importance of being able to share in the community that grew around local allotments, the opportunity to grow food in season to supplement the provision from stores (when it was expensive), the perception of care and attention that promoted food quality and prompted similar (growing) practices.

However growing food was also described as 'hard work', that required considerable skill, knowledge and constant care. The ability to grow food locally could be constrained by the expense, lack of space (particularly for those living in flats), limited and or oversubscribed urban growing schemes, poor health, knowledge and or skill. Space was a key limitation that contributed to inequitable experiences in the ability to grow food.

> "In this country, just rich people and (those) in the countryside, they have a big garden but in London, just rich people" – XN3 (Migrant group)
>
> "I would like to have a garden, I don't have garden, I live in a flat…if I change my house, I would like to have a garden to grow food like peppers. Peppers in the summer are cheap but in the winter they are expensive…" – XN2 (Migrant group)
>
> "I think everyone should have the right to an allotment spot or a garden". I am very envious of people that have an allotment plot. This is very close to where I live and it is really impossible to get a plot…you need to live in certain buildings…and it's probably a very long queue [to get one] …I like the allotment…I like that community feeling that comes with the allotment…the community that gets to grow around it, …" – XN4 (Migrant group)

The representations also revealed hidden meanings associated with consumer practices. For example, one participant remarked that she kept a basil plant (but did not use it in cooking) because caring for the plant was a form of self-care [Figure 18].

> *"I got this basil plant to serve as an ingredient…but I have not used the plant yet and do not think I will, I am likely to buy a fresh bag instead…. I often forget to water it …but I keep it anyway as my partner says "taking care of a plant is like taking care of yourself" – SB7 (Mixed group)*

Figure 18. 'Taking care of myself'

Source: Hackney Photovoice Collection

Several accounts of growing food also referred to the support and practical assistance received from family and friends, sometimes explained by ill-health or the lack of knowledge or skill.

> *"My relative she brought [the tomato plant] for me …[in] a little pot… and my ex-husband he put it in the soil" – – XN3 (Migrant group)*

Food labels were also explored during the Hackney Photovoice workshops. These labels were representational spaces that provided consumers with various types of information that was used to assess food quality (e.g., 'use by' or 'best before' date or the 'yellow-label' for marked down goods). However, study participants observed that the labels on their own were often insufficient ways to assess food quality and required other complementary contextual knowledge or information to avoid food waste.

There was a general consensus that yellow labels indicated reduced price but the quality of the food item that was reduced in price depended on the context – such as the reputation of the store, the visual assessment of quality or other knowledge of storage or cooking skills that could be used to extend shelf life etc. In particular, there was general agreement that goods with yellow labels from one store (M&S), was a sign of good value.

5.3.6 Spatial practice

The spatial practices reported or observed in Hackney included gardening, growing food including herbs, shopping for food, cooking, eating out, eating at home, using (food) apps, feeding children, sharing meals, preparing, sharing or receiving charitable food, storing food and managing food waste.

These practices were re(produced) in association with various contexts and needs that represented different types of interaction in a spatial set characteristic of each 'social formation'. Furthermore,

as noted in Section 5.1.6, spatial practices required a level of competence and performance, which ensured 'continuity' and a degree of 'cohesion' (Lefebvre,1991: 33). The spatial practices combined knowledge from multiple sources that assured the actor (in this case Hackney residents) of certain qualities, which enhanced or supported their performance of the practice in that space. These additional sources of knowledge were context-dependent and operated within a 'time-space' compression.

For example, a study participant observed the opportunity to eat without cutlery, which was allowed by the representation of the space (i.e. type of food – Ethiopian food - that allowed the practice). The ability to eat this type of food had been gained from living in Berlin (another European country). The local open food policy in a nearby garden also promoted another practice of eating out, while enjoying the beauty of gardens.

> *"This is an Ethiopian place that I like [Figure 19] …its good…it's actually quite cheap for eating out. So, its £5 and you get to take away… a combination of different vegan Ethiopian platters, …and you can share the food with your hands…I think it's such a cool thing to do…What I really like [is that], I take my take away and I go to the Dalston Curve Gardens. They have this open food policy…the thing is amazing…" – – XN4 (Migrant group)*

Figure 19. The Ethiopian Place

Source: Hackney Photovoice Collection

Managing waste was another practice discussed by the Hackney photovoice groups and raised as an issue for discussion with policy makers at the exhibition event. Some of the concerns about food waste related to food knowledge, the environment and plastic packaging, food quality (that prompted discussions on how food could be stored to retain its shelf life [Figure 20] or the versatile uses of different ingredients and presentations of food stuff).

For example, one participant shared tips about green and red Scottish bonnet (peppers) with another participant who complained about the quality of her purchases: "*one is for flavour and the other is for heat*"; another participant observed that, for unfamiliar foods particularly fruits and vegetables purchased before they ripened, it was difficult to avoid waste if one did not know when to consume it. Information provided by store labels were complemented with other knowledge to avoid waste. These uses of knowledge to avoid waste as a spatial practice, underlined Lefebvre's observation relating to the competence required for the performance of spatial practices – which took place in relation to the interaction with the space (i.e., need for other equipment or resources to support performance).

> *"Throwing food away based on the use by or best before date is a trap…when we didn't have them [this information], you could tell by the taste or smell…" – XN1 (Migrant group)*

Figure 20. Use by or best before?

Source: Hackney Photovoice Collection

> *"Before foods go off, I want to put them in a freezer bag or refrigerate them – to store them and reuse them… Chop up all our vegetables, sometimes we can chop our yams and put them in the freezer bags and put them in the freezer – you know, re-use food" – SB5 (Mixed group)*

> *"we were out today on a picnic and we ate the dates. We always put them (seeds) in the bushes, and sometimes I feel a bit bad…I have got a friend who feels that it is outrageous…she thinks of [practice of putting seeds in the bush] as littering…but I think it is better than putting them in the bin" - XN1 (Migrant group)*

Another practice discussed by the groups was growing food. Although the study participants agreed that the opportunity to grow food was valuable, it was generally acknowledged that it was not equally accessible. As a practice, growing food required competence i.e., knowledge and skills and resources to ensure performance such as (space, seeds, interest, knowledge, time, good health, skill and a supportive community of friends, family or good neighbours who had these resources

and displayed 'competence' in their 'performance' of the growing food). This was captured by observations during the photovoice discussions:

> *""No, growing food [requires] competence… that is why I let friends grow things in my garden, because … I am terrible, I look after them then I let the snails get to them…you need to have time [all participants agree] – XN6 (Migrant group)*
>
> *Like babies, you have to take care… everyday…" – XN1 (Migrant group)*

As a potential food source, produce received from individual allotments or home gardens (e.g., friends or neighbours) also required a measure of trust, which assured the consumer that the gardener was competent (i.e., the food would be safe to eat) - this assurance was also gained from the context (e.g., Farmer's market or long-term neighbour) that allowed a consumer to receive and use the garden produce with confidence.

Spatial practices underpinned by an actor's level of performance/competence were also shaped by individual needs. Hence, some participants acknowledged using only certain types of vendors to source food because the spaces represented organisations that could be held "accountable" or the space allowed the use of knowledge, with which the actor was competent (such as being able to touch or smell food to assess the quality). These practices highlighted the underlying needs of actors to assure the quality of the food (and to get due compensation for foods that did not meet the standard or to be able to recreate known practices in a different setting). Several needs were expressed in relation to the practices such as gardening ("aesthetics/mental health, building community"), cooking at home ("healthy food", ensuring children are well fed) or purchasing foods from certain vendors (perceptions of quality, ability to apply sensory assessment, atmosphere or friendliness of the retailer, convenience). These needs were not always obvious and were linked to the performance of the practice.

5.4 Discussion/Summary

In this chapter, I have applied a place-based approach to the qualitative component of my study using the theoretical concepts proposed by Lefebvre (1991) and Massey (1994, 1999, 2005). Lefebvre, a philosopher and Massey, a geographer, both advocated a transdisciplinary examination of the social interactions in place as an analytical tool. This study which included multiple methods involved a range of actors including stakeholders (who lived worked with the local council or

refugee, migrant or food charities in the case study areas and had good local knowledge), retailers and residents examined six main concepts of place. These theoretical concepts considered were: place as an active agent in its own reproduction, the politics of place, the multiplicity/openness of place, the representations of space, representational space and spatial practice.

Each of the concepts proposed by Lefebvre (1991) and Massey (1994, 2005) were used in the examination of two case-study areas Kingston-Upon-Hull and Hackney Borough of London, which were chosen because of the comparatively high levels of relative deprivation but distinct patterns of migrant density (relatively lower in Hull compared to Hackney). The field-work for this study was conducted between 2020 and 2022. The findings for each case study area and a comparative analysis of the both findings are explored in the following sub-sections.

Kingston-Upon-Hull

Overall, the findings from Hull showed a relatively deprived area with limited contact zones for social interactions between migrants and non-migrants due to the (segregated) residential/ occupational patterns, the size and distribution of the migrant population and the level of capital flowing through the city. In Hull, the social interactions were mediated through the flow of capital that has shaped labour relations, residential settlements (and segregations) and attitudes associated with these encounters; which have a historical precedent and exist within the wider social and political context.

Furthermore, the distinct flows and forms of interaction have (re)produced relatively segregated spaces and practices. For example, flows of fishermen moving to and from the docks, of merchant investments, of migrants travelling through Hull led to different depths of social interactions between the 'separate' communities. The displacement of the community following deindustrialisation and the move from the fishing village to high rise flats disrupted existing power dynamics and created new alliances and conflicts as extended family units/communities were separated leading to a redistribution of the different forms of social and cultural capital.

More recently the 'copresence of migrants' particularly settled EU migrants who work in the agricultural sector in and around Hull have also created conflict (and a sense of displacement) as their place-making activities have become evident. Some of the notable changes such as the growing presence of enterprises has led to the revitalisation of some areas of the city. These services created by the social interaction between ethnic entrepreneurs, migrant populations and the local population have signs and symbols that are representative of cultural spaces and needs. In addition, greater opportunity for travel by Hull residents to other parts of Europe and the world,

have introduced new tastes (however the adoption of new tastes was in part, dependent on individual needs).

In addition, the changing population is gradually transforming the shape of food places in Hull – introducing new services but also re-distributing flows. Interactions in local areas were re-directed by the presence of large supermarket chains (within the city centre and on the outskirts of the city) from smaller local independent stores, which struggled to adapt to the needs of the new (migrant) consumers.

Study participants described different types of identities. These identities allowed different forms of interaction and access to spaces mediated by individual features such as gender, age or language skills. The identities included the place of birth, migrant background, parent's – both or one migrant background (and experience seemed to vary depending on if the migrant parent was the mother or father), religious background, family/single unit, 'Hull - born and bred', "Hull-born and bred – mixed background', 'UK born non-migrant', 'UK-born of an ethnic minority background', 'Migrant – worker', 'migrant -refugees' and individual tastes that were not defined by ethnic, or migrant characteristics. Several identities enhanced the actor's capacity and performance (and hence access) in different spaces. These identities also allowed interaction in different social spaces, access to forms of knowledge and opportunities to influence networks.

Negative attitudes to difference had the potential to limit the quality of social interactions (Valentine 2008) that did not depend solely on 'copresence' (Massey, 2005). Furthermore, the socio-economic deprivation i.e., experienced by some residents limited their ability to engage fully with the opportunities greater social interaction could provide i.e., the availability of capital (or other materiality that allows 'embodied participation), its distribution and how it facilitates the negotiation of difference contributed to patterns of inequality in the population (Ashin & Pain 2011).

In addition, the results showed how the transformation of the food landscape, due to the patterns of migration and flows of capital, impacted associated practices (e.g., settled migrants spending their money in Hull or FareShare food redistribution system).

A better understanding of the direct and indirect elements of social interactions in place, could indicate the potential impacts of interventions or major changes in the way resources are distributed and its impact on more vulnerable members of the population. Furthermore, understanding the 'latent relationships' in the production of place could support the design and

development of local interventions, which could incorporate flexibility for the changing forms of place. This approach could be explored in identifying the best way to regulate or manage takeaway places in Hull.

Hackney

Hackney Borough of London, like Hull had a dock, that transported goods, supported a range of industries and provided employment. The development of larger vessels, which required more space (and depth) and deindustrialisation led to a concentration of poverty in Hackney, which comprised of a diverse population including migrants and creative people. The population, who benefitted from the relatively cheap social housing were also connected to other parts of London through several transport links (subway, trains and buses). Hackney's connectively and relative proximity to Central London are important features that continue to attract people, including migrants who use its assets, - cultural centres, ethnic businesses, markets, cheap office/business space (i.e., live, visit or shop in Hackney). Government policies -local, national and regional – have also played an important role in shaping Hackney over the years that has transformed its infrastructure, population, settlements and the resulting connectivity.

In particular, the local council actively harnessed Hackney's diversity, which was also commodified to generate different forms of capital. Hackney's visible diversity, vibrant migrant entrepreneurship and the economic situation in London that encourages internal and international tourism, provide ideal conditions for this venture (Fincher et al, 2014). However, this has led to a form of displacement for long-term residents that display 'commonplace diversity' and delineated the boundaries of settlers whose socio-economic status (Wessendorf, 2010) seems 'out of place', as their consumption patterns reshape Hackney's landscape (Lagadic, 2019).

These transformations are changing the patterns of interactions between residents and different places and the value of different types of capital – social, cultural and economic - needed to negotiate (food) spaces including allotments and food stores. In addition, shocks to the system, such as food incidents or COVID, which exposed vulnerabilities in social networks, led to a reorientation of established networks and created opportunities (such as sharing/coordination of resources between civic organisations or virtual cooking classes taken up by migrant families). However, the ethnic/racial or migrant characterisations, which are often used to identify potential needs did not address all vulnerabilities in diverse places like Hackney. Residents who had

inadequate economic, cultural, digital or social capital (i.e., limited ethnic, religious or other migrant social networks) remained particularly vulnerable to shocks.

The super-diversity of Hackney's population promoted plural spaces accessed in various ways (including voluntary/civil/religious organisations representing ethnic or migrant interests) and times and for different reasons. Some of the spaces also provided employment for local residents, where the multicultural setting provided flexibility in negotiating identity and therefore access to resources (Wessendorf, 2018). However, residents of Hackney still traded in different forms of capital, needed for different spaces. Participants described different types of relations, networks across time and space and reported a range of fluid boundaries negotiated between the 'private', 'public' and 'parochial' – including virtual spaces (Lofland, 1998 cited in Wessendorf, 2010; Wessendorf, 2018).

These spaces were navigated through spatial practices that were learned (from others, family, friends) or 'conditioned' by the context. For some residents, these contexts included restrictions (for religious, health, lifestyle or other purposes); for others their legal status (language or other barriers), created boundaries that limited social interactions and or their place in the local area. In addition to the changing place, identities in Hackney were also changing and included generations of migrants, whose practices and or representational spaces did not fit the stereotype, as their social networks extended beyond 'cultural' bonds. These 'positions' were obvious and also obscure – obvious in the interactions, hybrid (food) places but hidden by retained structures, processes and practices, which had changed meaning (a meaning that became relevant only when the context allowed). For example, concerns about the safety of the Ridley Road market were expressed by different participants, who altered their practices (shopping in different places or at different times) to address their concerns.

The variety of foods in Hackney is also undoubtedly a function of the multiplicity of places - foods sourced worldwide through transnational ties. This multiplicity of places, supported indirectly by the government's policy of 'resilience' and actively managed by local interests has been commodified; a commodification that changed the access and value (representation and representational spaces) of foods for some residents. However, not all (cultural or 'ethnic') foods have made the transition (to the market), which may reflect the complex links between historical frames and attitudes. The pattern of commodification could also be influenced by the representations of people (and their foods), the size of migrant settlements and patterns of access

into the labour market (i.e., language and other skills creating greater access to the mainstream job market for some migrant groups compared to others).

Furthermore, the mix of various markets, charitable organisations, takeaways, bakeries and stores, which operated at different times served different needs; resourceful residents negotiated capital across different spaces (i.e., used knowledge, money, cultural assets) to ensure food security. However, residents without sufficient and multiple forms of capital, were sometimes left vulnerable (also observed by Wessendorf, 2018).

Although both case-study areas were similar based on the relative levels of area deprivation, the different place-contexts – geographies, histories, economy – evolved (and continue to evolve) actors (and their interests), links to other places, power-dynamics, infrastructure, processes and outcomes that distinguish them. The interaction between the place-based contexts and the people – including the migrants have (re)produced different levels, types of plural networks, power dynamics, representations of space, representational spaces and power dynamics.

In both local areas, the changing forms of diversity were reflected in the growing networks (civil, local, interpersonal relationships) and local places. Various interactions and diversities were reported in each area and 'boundaries' drawn based on the level and sense of displacement caused by members of the population. In Hackney, where ethnic, migrant and racial diversity is 'commonplace', the 'outsiders' were those whose social practices (and or interactions) literally displaced others. Many residents readily identified these features as the 'difference' and the main driver of change. In Hull, the changing occupancy of spaces and visibility of new settlers also caused a sense of displacement (although most participants when asked about changes to the local area referred to the new infrastructural developments it was generally acknowledged that there was a changing demography).

Compared to Hull, Hackney's recognised diversity of migrants/migrant pathways created many more places, a multiplicity that could be commodified due to its population density, geographical/ spatial location, proximity to the City of London and transport links. Participants reported experiences of navigating various spaces to meet their needs, with spatial practices that extended boundaries beyond the Borough. Representations of space, which included a mix of food systems (traditional and modern) provided different forms of access that could meet the various representational understandings of place (meanings), accessed with different forms of capital. These variations also contributed to inequalities of access. Similar observations were reported by

Bowyer et al. (2006) study of food shopping practices of Hackney residents and highlighted a range of interactions associated with sourcing good quality and affordable culturally appropriate foods. The findings of this study, which included focus group discussions and in-depth interviews across three relatively deprived areas of Hackney, also identified hygiene, safety, payment methods and transport links as particular issues.

Furthermore, although super-diversity created varied networks, it did not qualify the forms of interaction or contact, which included a range of bonding (within social groups) and bridging (between social groups) ties (Fincher et al, 2014). In spite of the greater population density, that expanded the potential zones of encounter (Wood and Landry, 2007 cited in Wesserndorf, 2010); different social realms were maintained i.e., exposure to different cultures did not always result in a cultural exchange (Amin, 2002).

In Hull, migration, particularly international migration, also extended social networks. However, difference was not 'commonplace' (Wessendorf, 2010) and seemed to reinforce the sense of identity for some of the study participants. Migrants, who had existed in a liminal space (on the way elsewhere), were becoming emplaced with direct evidence of their place-making activities in the market place. The new settlements created convivial opportunities but also generated a sense of displacement and conflict (Amin, 2002). These encounters (re)produced social relations and the awareness, understandings and representations of places, people and foods.

Furthermore, in Hull, the various social networks seemed differentiated by labour relations. Local industries also impacted patterns of settlement and incorporation through their use of migrant labour. These networks produced specific patterns of migrant incorporation such as the (transient) migrant hospital staff, settled EU migrants (working in food industries and settled following Brexit) and Kurdish refugees (mainly men, intermarrying or setting up ethnic businesses when citizenship was confirmed). Mixed encounters in public (and sometimes private) spaces were also reported with a variation in the way it shaped individual practices, particularly in the private sphere.

These encounters allowed for comparisons, particularly relating to food attitudes and practices, that on the surface seemed underpinned by cultural differences (i.e., migrants having 'better' attitude to food, skills and consumption practices compared to the 'equally disadvantaged' local people). The application of Lefebvre (1991) and Massey's (2005) concepts of the social reproduction of place, however highlighted other structural factors implicated in the complex expression of social practices. Furthermore, national and local government policies were yet to

recognise or harness the migrant assets in Hull (possibly due to the political sensitivities, attitudes and investment that would be required to support the relatively small refugee/asylum seeker settlements). These features of organisation in local government, the relative size of the migrant population and its connectivity to the flow of economic capital differentiated Hull from Hackney.

Overall, the findings point to the way migration impacts the interaction between people and places. It highlights the multiplicity of social differentiation generated or (re) produced from the social interaction that integrates historical, geographical, political, social, economic and cultural factors. Migration contributed to the multiplicity of people and things (foods, types of knowledge and forms of capital), a diversity that was reflected in local places, including food places.

Using the framework informed by Lefebvre (1991) and Massey's (1994, 2005) concepts of space, highlighted the various actors involved in the production of space, particularly the influence of regional, national and local policies in the food and non-food sectors, over time. The multiple interaction of these various actors (underpinned by capital) determined the flows/mobility of people, ideas and things and the transformation of place. The active role of place – its geographical, demographic and spatial assets also contributed to shaping place and the experiences of its residents. In addition, the framework also allowed a wider analysis of the different types of flows – internal, international, transnational and virtual flows of people, information and foods – in the (re)production of place.

Furthermore, the family as the basic unit of social interactions was also reinforced by references to learned spatial practices and opportunities to (re)produce social networks – particularly with the presence of children. Learned knowledge and memories of practices, representational spaces and representation of spaces became part of the interactions that (re) produced space i.e., people used a range of frames and different types of knowledge in their interactions, which was in turn (re) produced in place. For example, the popularity of open markets in Hackney could reflect in part migrant knowledge of traditional food systems, also increasingly (re)created in parts of Hull that had migrants from local areas where traditional food systems would be prevalent (i.e., the Eastern European stores did not display fruits/vegetables outside in the same way as the Asian/Kurdish stores).

The comparison of Hackney and Hull, two relatively deprived areas but different in the density of the population (particularly the migrant density) showed multiple forms of diversity, which as Massey (1994) noted, were socially constructed. Diversity crossed ethnic and racial lines and

extended to other social, economic and historical networks that 'included' or 'excluded' people; intersections, that could be hidden or obvious and had the potential to foster inequalities.

5.5 Implications for Public Health

This qualitative mixed methods study highlighted different views from an analysis of the interactions between place and people that pointed to the politics of place at different levels, the extensive forms of knowledge used to navigate places and the links associated with various forms of interaction in places. Migration is both an opportunity and a challenge for public health policy that contributes to the complexity of various systems in place (housing, planning, food, transport etc). The 'disruptions' caused by different flows of people, ideas and things could be harnessed to drive transformations but could also (re)create sites of inequality, sometimes hidden.

In Hull, changing patterns of migration had increased food knowledge and the variety of migrant enterprises and or foods. This variety increased the availability and accessibility of cultural goods for those with a migrant background; however, it was not equally affordable. The new knowledge led to different understandings (meanings) associated with food experiences and representations of space. In Hackney, internal migration or gentrification was observed as a major demographic change that had led to a commodification of place and reshaped the availability and access to (food) spaces and affordability of cultural goods.

Local public health policy could benefit from the diversity of migration by exploring how different meanings associated with food places (local and mainstream) could be used to promote better diets and health outcomes. Working collaboratively, it could harness the knowledge from other (non-food/non-health) sectors (including businesses and units within the local council) to identify potential levers for effective interventions.

5.6 References

Atkinson, D., McDonagh, B., McKeon, S., Salter, E., Starkey, D.J., & Wilcox, M. (2017). Introduction. In. A. Atkinson, B. McDonagh, S. McKeon, E. Salter, D.J. Salter and M. Wilcox (eds.) *Hull: Culture, History, Place*. Liverpool, Liverpool University Press, 1-15

Askins, K., & Pain, R. (2011). Contact zones: Participation, materiality, and the messiness of interaction. *Environment and planning D: society and space*, *29*(5), 803-821.

Bell, D., & Valentine, G. (1997). *Consuming Geographies: We Are Where We Eat*. London, Routledge

Bowyer, S., Caraher, M., Eilbert, K., & Carr-Hill, R. (2009). Shopping for food: Lessons from a London borough. *British Food Journal*. 111(5), 452-474 https://doi.org/10.1108/00070700910957294

Cresswell, T. (2010). Towards a politics of mobility. *Environment and planning D: society and space*, *28*(1), 17-31.

Evans, N. J. (2017). The making of a mosaic: migration and the port city of Kingston upon Hull. In. A. Atkinson, B. McDonagh, S. McKeon, E. Salter, D.J. Salter and M. Wilcox (eds.) *Hull: Culture, History, Place*. Liverpool, Liverpool University Press, 145-173

Fincher, R., Iveson, K., Leitner, H., & Preston, V. (2014). Planning in the multicultural city: Celebrating diversity or reinforcing difference?. *Progress in Planning*, *92*, 1-55.

Hackney Borough of London Council (2018). Joint Service Needs Assessment. https://cityhackneyhealth.org.uk/wp-content/uploads/2018/03/Migrant-Health-Needs-Assessment.pdf

Kershen, A. (2002). *Food in the Migrant Experience* London,

Krishnendu, R (2016). *The Ethnic Restauranteur*. Bloomsbury. London

Lefebvre, H. (1991). *The Production of Space* (translated by D. Nicholson-Smith). Malden: Blackwell Publishing

Massey, D., (2005). *For Space*. Sage. London, California, New Delhi.

Massey, D. (2012). Reflections on the dimensions of segregation. *Social Forces*, 9(1), 39-43

Sheller, M., & Urry, J. (2006). The New Mobilities Paradigm. *Environment and Planning A: Economy and Space*, 38(2), 207-226. https://doi.org/10.1068/a37268

Tommarchi E., & Bianchini, F. (2022). A heritage inspired cultural mega even in a stigmatised city: Hull UK City of Culture 2017. *European Planning Studies*, 30 (3), 478-498

Valentine, G. (2008). Living with difference: reflections on geographies of encounter. *Progress in Human Geography*, *32*(3), 323-337.

Wessendorf, S. (2010). Commonplace diversity: Social interactions in a super-diverse context. *MMG Working Paper 10-11* https://pure.mpg.de/rest/items/item_1126645/component/file_2057868/content

Chapter 6: Quantitative Results

Background

Chapter 6 introduces the quantitative component of the thesis. The cross-sectional analyses developed Lefebvre's concept of place as an outcome of the practices that emerge from everyday interactions. The analyses determined the association between migrant density (proportion of persons of non-UK birth within lower layer super output areas) and food purchasing practices using 2012 data from a large household consumption panel representative of the UK population. Of the four patterns of household purchases examined, there was a positive association between migrant density and the share of household calories purchased from fruit and vegetable, and an inverse association with the share of calories purchased from ultra-processed foods and dietary diversity scores. No associations were found with share of total calories form high fat sugar and salt. This chapter is structured as follows: It includes a short overview, a description of the data, analytical results and a concluding summary. The measures of diet quality, which point to current issues in nutrition, highlight the complexity of consumption practices and a need to re-contextualise public health policies and interventions.

6.1 Introduction

Migration, which is intricately linked to place, itself a process that transforms, is socially and culturally constructed and produces various experiences through different practices (Cresswell, 2010). Hence the attendant practices associated with consumption, are also inherently political - who produces or consumes what, where, how and to what effect (Massey, 2005). For example, a greater diversity of food products, per capita consumption of fruits, nuts, fish and vegetables was observed in areas with high migrant (Latino) population in the United States (Andreeva & Unger, 2014); a similar observation was made in Australia on migrant introduction of new food species, processing, retail and consumption practices (Wahlqvist, 2002).

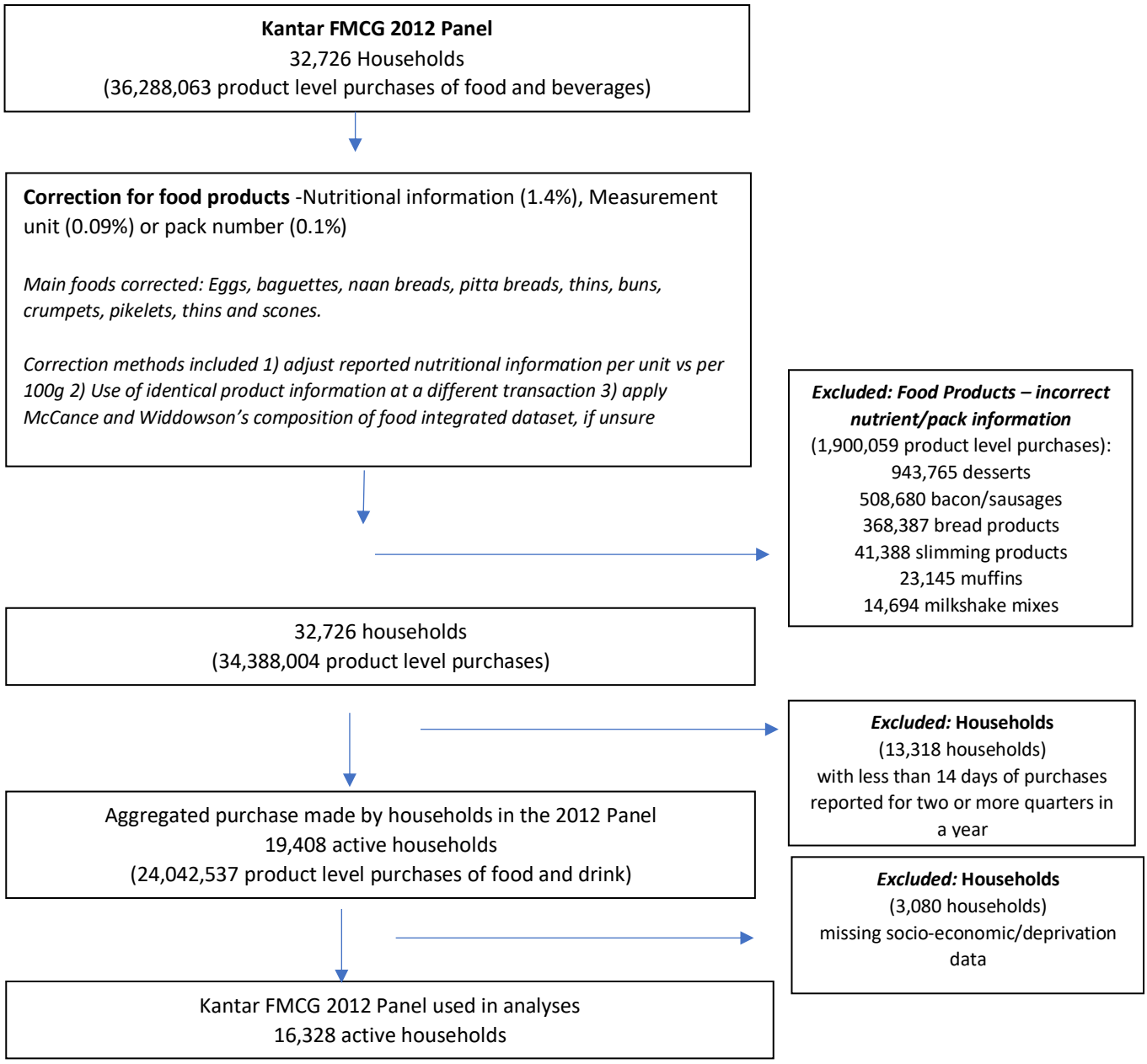
Public health policies are often designed to inform or regulate food practices such as production (Draper & Green, 2002; Fanzo et al., 2016; Millstone & Van Zwanenberg, 2002) or consumption (Cornelsen et al., 2019; Kerr et al., 2015) and the contexts of consumption such as zoning or local planning laws (Brown et al., 2021; Keeble et al. 2019). A place-based approach to public health policy formulation can invite reflection of the nuanced interactions which (re)produce individual behaviours or spatial practices (Lefebvre, 1991) i.e., a deconstruction and re-localisation of contexts and everyday practices.

Several factors influence food choice such as income, age, gender, type of household, social class, ethnicity, migration status (Stroeble-Benshop, 2018; Wang & Lo, 2007); food type (e.g. natural or organic), ethics, quality (Brunsø et al., 2002), price (Koksal, 2019; Mohd-Any, 2014), convenience (Buckley et al., 2007; Mohd-Any, 2014), preference or taste (Aggarwal et al., 2016), religious or ethical beliefs and attitudes towards persons perceived to hold these beliefs (Koksal, 2019; Diemling & Ray, 2014), region (Wang, 2020); context of consumption – public or private, physical and mental health (Bisogni et al., 2007).

6.1.1 Overview of the Kantar FMCG 2012 Panel

For these analyses I used data from a larger household consumption panel, known as the Kanter FMCG panel. The 2012 Kantar FMCG panel comprised 32,726 households with 36,288,063 product level purchases of food and beverages. 19,408 households in the panel were eligible for inclusion in the analyses after excluding households without recorded purchases for 14 days within at least two quarters in the year (42% of the households; n=13,318) to ensure that only regularly participating households were included in the final analyses (Griffiths et al, 2015). In addition, households with missing socio-demographic information were excluded (8% of the households; n=3,080). The final sample comprised of 16,328 households (Figure 21).

Figure 21. Kantar FMCG 2012 Panel Flow Chart



Source: Kantar FMCG Panel 2012

6.1.2 Characteristics of the Kantar FMCG 2012 Panel

The total number of panel households included in the final analyses was 16,328 – 50% of the original sample (Figure 21).

A fifth of the households were single-person households, 38% were two-person households, 70% of the households comprised only adults and a third were owner-occupiers (33%). More than half of the households had a main shopper aged 50 years or older, had a social status of professional manager/white collar worker (i.e. 58%) and more than a quarter (26%) had a degree or higher educational qualification. Two thirds of the households were resident in postcode districts with a

migrant density of less than 10% based on Census data and 15% of the households were based in London or the Midlands (Table 7).

6.1.3 Excluded households

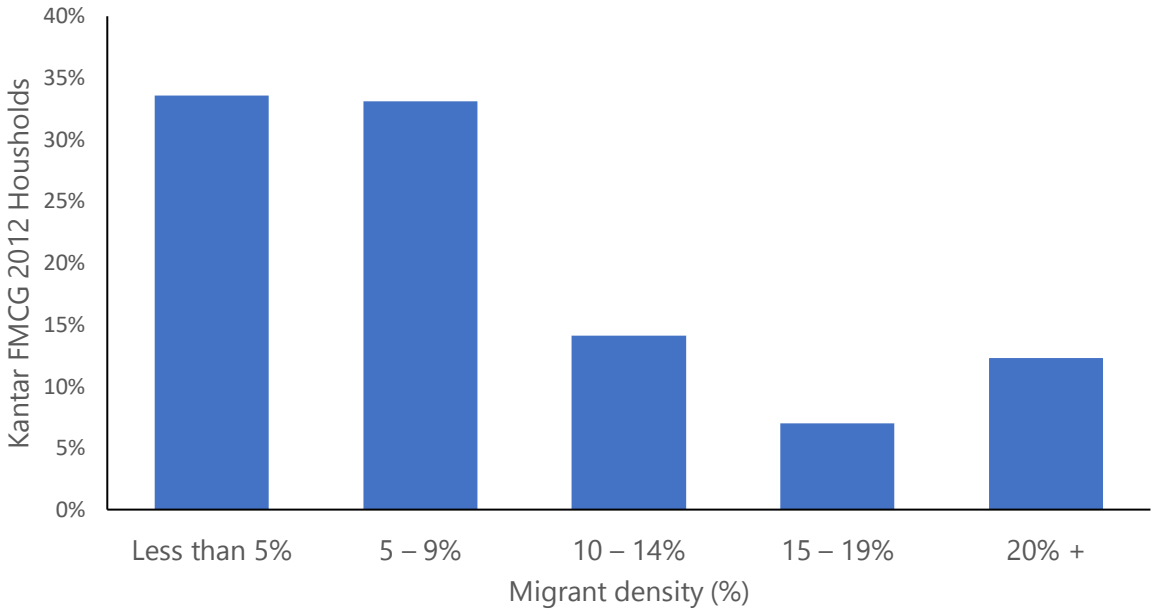
The excluded households comprised (mainly) those missing details of household income and the one household that could not be linked to the Census data due to mismatched postcode. Compared to the final sample used in analyses (n=16,328), the exclusions comprised of households with more adults and included more main shoppers aged 70 years or older. About a fifth of the excluded households were based in London, owned their homes, had a main household shopper who was in a skilled, semi-skilled or manual occupation. About 18% of the households lived in postcode districts with a migrant density of 15% or more.

Furthermore, there was little difference in the diet quality measures assessed except the calories from ultra-processed foods, which was relatively higher in the excluded households. Overall, for 'healthier' kilocalories purchased (Excluded households median/mean: 44.8% /45.4% compared to *Final sample households*: 45.0%/45.4%); for the proportion of kilocalories from fruit and vegetables purchased (Excluded households median/mean: 8.2% /8.9% compared to *Final sample households*: 8.3%/8.9%) except a slightly greater average proportion of kilocalories from ultra-processed foods (Excluded households: median/mean: 60.7% /69.8% compared to *Final sample households*: 59.3%/58.6%).

6.2 Migrant density and Kantar FMCG 2012 Households

Overall, two thirds of the households lived in postcode districts with a migrant density of less than 10% based on the 2011 Census; only 12% of the households lived in areas with a migrant density of 20% or more (Figure 22).

Figure 22.Kantar FMCG 2012 Panel Household distribution by Migrant density



Source: Kantar FMCG Panel 2012, 2011 Census

The mean migrant density of all households was 10.6% with a median migrant density 6.7% (Percentiles: 25th: 4.3% and 75th: 12.5%).

Table 7 provides descriptive statistics of migrant density for each of the household characteristics. A higher migrant density (median) was observed amongst single-person and larger households (including those with children), households in London, those within a higher income bracket, resident in areas of relative deprivation and living in rented accommodation (i.e., tenure).

In addition, households where the main shopper was of a younger age, had a degree or higher educational qualification, of a professional/managerial social class or of a non-White British ethnicity had a relatively higher median migrant density.

Table 7. Description of Migrant density in Kantar FMCG Households (n=16,328)

Household Characteristics	Households		Migrant density (%) (Non-UK birth)		
	n	%	Percentiles		
	16,328	100%	25th	50th	75th
Household size					
1 person	3,418	21%	4.60	7.46	14.21
2 people	6,157	38%	4.12	6.30	10.95
3 people	2,743	17%	4.21	6.77	12.49
4+ people	4,010	25%	4.40	7.05	12.79
Household composition					
Adults	11,501	70%	4.26	6.62	11.87
Children	4,827	30%	4.41	6.99	12.78
Household main shopper - Age					
Less than 29 years	620	4%	4.55	7.49	15.03
20- 39 years	2,698	17%	4.54	7.45	13.82
40 – 49 years	3,773	23%	4.34	7.09	13.36
50 – 59 years	3,446	21%	4.25	6.83	11.93
60 – 69 years	3,277	20%	4.09	6.22	10.89
70+ years	2,514	15%	4.30	6.31	10.83
Highest education					
Degree or higher	4,272	26%	4.51	7.62	14.49
Higher Education	2,540	16%	4.10	6.39	11.40
A-Level	2,100	13%	4.29	6.65	11.83
GSCE	3,857	24%	4.35	6.47	11.41
Other education	1,716	11%	4.30	6.40	11.31
None	1,843	11%	4.03	6.37	11.35
Region					
London	2,396	15%	11.60	20.29	37.68
Midlands	2,412	15%	4.81	7.47	12.57
North East England	838	5%	2.38	3.38	5.45
Yorkshire	2,210	14%	3.43	5.30	9.21
Lancashire	1,773	11%	3.58	4.91	9.22

Household Characteristics	Households		Migrant density (%) (Non-UK Birth%)		
	n	%	25%	50%	75%
South England	1,796	11%	6.11	8.25	11.11
Scotland	1,508	9%	3.37	4.59	7.04
East Anglia	1,434	9%	5.31	8.54	12.99
Wales / West England	1,409	9%	3.60	5.24	7.56
South West	552	3%	4.30	4.66	5.54
UK IMD Quintile Adjusted					
IMD Q1 Least deprived	3,028	19%	4.91	7.30	10.49
IMD Q2	3,153	19%	4.27	5.88	10.26
IMD Q3	3,546	22%	3.79	5.87	10.25
IMD Q4	3,425	21%	4.09	6.85	14.56
IMD Q5 Most deprived	3,176	19%	4.63	9.48	19.58
Household Tenure					
Owned	5,459	33%	4.20	6.38	10.99
Mortgaged	6,170	38%	4.24	6.58	11.63
Rented	4,491	28%	4.53	7.49	15.14
Other	208	1%	4.85	7.31	16.13
Household income					
£0 - £9,999pa	1,763	11%	4.13	6.62	12.73
£10,000 - £19,000pa	4,501	28%	4.11	6.26	11.28
£20,000 - £29,000pa	3,621	22%	4.24	6.47	11.40
£30,000 - £39,000pa	2,512	15%	4.29	6.62	12.17
£40,000 - £49,000pa	1,729	11%	4.45	7.24	12.78
£50,000 +pa	2202	13%	4.85	8.16	14.81
Household main shopper – Ethnicity					
Non-White British	1,386	8%	7.74	15.63	33.53
White British	14,942	92%	4.19	6.43	11.11

Household Characteristics	Households		Migrant density (%) (Non-UK Birth %)		
	n	%	25%	50%	75%
Main shopper Ethnicity – Detail					
White British	14,942	92%	4.19	6.43	11.11
White Irish	97	1%	5.44	10.99	22.63
White-Other background	492	3%	5.78	10.90	25.16
Indian	189	1%	14.77	21.36	40.38
Pakistani	97	1%	12.73	22.43	36.20
Bangladeshi	16	0%	15.62	33.85	41.54
Asian-Other	52	0%	7.66	14.24	29.03
Mixed White/Black Caribbean	27	0%	5.98	9.68	22.19
Mixed White/Black African	16	0%	9.63	23.87	35.74
Mixed White/Asian	23	0%	5.95	12.83	19.33
Mixed-Other	45	0%	6.51	12.43	24.33
Caribbean	118	1%	14.49	31.77	42.11
African	76	0%	11.43	25.75	37.47
Black-Other	9	0%	16.13	29.68	41.20
Chinese	78	0%	5.74	12.43	22.43
Other-NS	51	0%	9.26	15.42	36.10
Social grade					
AB: Professional/Manager	3,328	20%	4.52	7.28	13.03
C1: White collar	6,140	38%	4.35	7.04	12.96
C2: Skilled manual	2,938	18%	4.12	6.12	10.47
D: Semi-skilled /manual	2,180	13%	4.24	6.56	11.58
E: Unskilled/manual worker	1,742	11%	4.10	6.30	12.35

Sources: Kantar FMCG Panel 2012 Extract, 2011 Census – UK Data Service, Abel et al (2016)

6.3 Measures of Diet Quality

For this study, four different outcomes were explored. The following section provides a description of each of these outcomes in the Kantar FMCG panel.

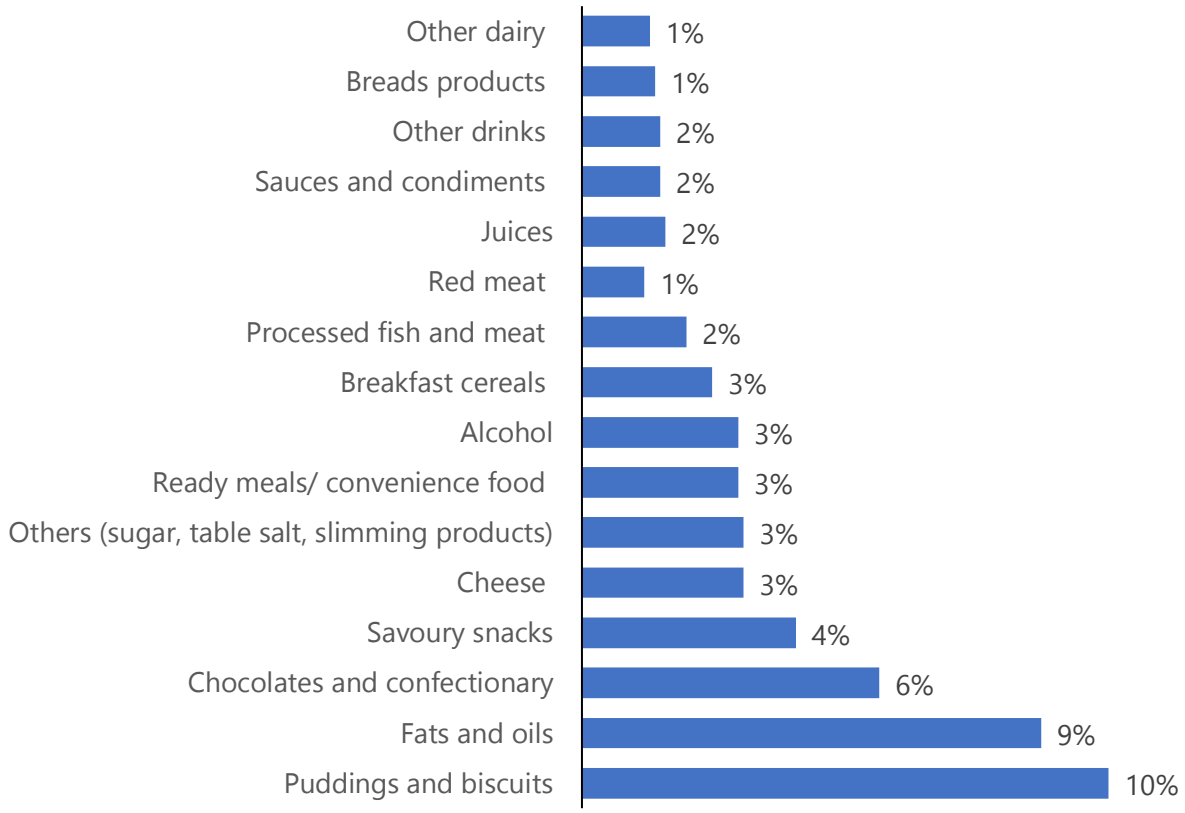
Measures of Diet Inadequacy

6.3.1 Proportion of kilocalories from UK NPM Score 'Less Healthy' kilocalories

6.3.1.1 Descriptive overview of household purchasing patterns for 'less healthy' kilocalories

Of the 35 food groups derived from the UK Department of Health Nutrient Profile Model (UK-NPM), 17 were classed as 'less healthy' i.e., 55% of all the total food and drink kilocalories purchased by the sampled households. The main foods that made up the 'less healthy' categories included puddings and biscuits, fats and oils, chocolates and confectionary, savoury snacks (Figure 23 – Bar Chart).

Figure 23. Household purchases of 'Unhealthy' foods



Source: Kantar FMCG 2012 Panel

The mean proportion of 'less healthy' kilocalories purchases was 54.6 with a standard deviation of 8.8 (median 55.0). The mean proportion of 'less healthy' kilocalories purchased was relatively greater in households living in more deprived areas and rented accommodation but lower in households with children, those of a professional/managerial social class or an annual income of

£40,000, where the main shopper reported a degree, had higher educational qualifications or was of a non-White British ethnicity and households with a higher migrant density (Table 8).

6.3.1.2 Regression analysis: migrant density and household kilocalories of 'less healthy'

Table 9 summarises the results of unadjusted (univariate) and adjusted (multivariate) linear regression models to estimate the association between migrant density and measures of diet inadequacy. In the unadjusted model, the proportion of 'less healthy' kilocalories purchased by sample households, decreased by 0.035% for each percentage increase in migrant density (Table 9).

In the adjusted model, when other household and area characteristics were accounted for (R^2 =0.0242; df: 35,16,292; F: 12.55; p:0.0001), there was no association observed between migrant density and the purchase of 'less' healthy kilocalories (Table 9). Other variables associated with the purchase of kilocalories from 'less healthy' foods were region of residence, household tenure, household size, social class, the age, highest educational qualifications of the main shopper and a household income of £50,000 or more (not shown – please see Appendix 5 for details).

6.3.2 Proportion of kilocalories from Ultra-processed foods

6.3.2.1 Descriptive overview of household kilocalories for 'ultra-processed' foods

The adapted NOVA classification produced five groups from 106 expanded food groups: (i) ultra-processed foods comprised 56.1% of the foods and beverages purchased (59% of kilocalories), (ii) unprocessed foods which comprised 31.4% of the food/beverage purchases and 25.7% of the kilocalories (iii) culinary ingredients which made up 2.3% of the food/beverage purchases and 8.2% of the kilocalories (iv) processed foods that comprised 7.8% of the food/beverage purchases and 4% of the kilocalories (v) water and other packaging, which comprised 0.02% of the total purchases in the study; this category was not included in the total kilocalories and thus excluded from further analyses (Appendix 5).

The ultra-processed foods comprised 56.1% of the foods and beverages purchased and 59% of all the kilocalorie content in the study sample. The distribution of the proportion of kilocalories purchased from ultra-processed foods by the panel was fairly normal with a mean of 58.4% (median: 59%) and slight negative skew (-0.295).

The main household purchases classed as ultra-processed included ready meals and convenience food products (24%), sweets, cakes and confectionary (17%), cereal and cereal products including breads, filled pasta (14%) sweet and savoury snacks (9%) and sugar sweetened beverages (6%) – a full list may be found in Appendix 5.

The mean proportion of kilocalories from ultra-processed foods was greater in single-person households and households with three or more persons, including those with children; it also increased with relative deprivation, lower social grades, mortgaged or rented housing tenure, amongst households whose main shoppers were younger than 50 years, of a White British ethnicity, without a degree or higher educational qualification and amongst households in areas of a low migrant density (Table 8).

6.3.2.2 Regression: migrant density and household kilocalories of ultra-processed foods

In the unadjusted analyses, as a continuous variable, the proportion of household kilocalories from ultra-processed food purchased decreased by about 0.1 % for each percentage rise in migrant density of the postcode district (R^2 =0.005; df: 1,16326; F: 81.86 p: 0.0001) – Table 9.

After adjustment for other household, shopper and area characteristics, the association was attenuated to a 0.04% decrease in the proportion of ultra-processed kilocalories for every percentage increase in migrant density (R^2 =0.100; df: 38,16289; F: 48.20; p: 0.0001)

The multivariable (adjusted) model also showed a negative association between migrant density and the proportion of kilocalories from ultra-processed foods purchased for households with a relative income of annual income of £40,000 or more and amongst households where the main shopper was of a non-White British ethnicity. In contrast, the purchase of ultra-processed foods increased with relative deprivation, amongst households of a relatively lower social class or educational qualification, with children and types of housing tenure compared to the reference groups in these categories (not shown: please see Appendix 5).

Measures of diet adequacy

6.3.3 Proportion of kilocalories purchased from fruit and vegetables

6.3.3.1 Descriptive overview of household kilocalories for fruit and vegetable

Overall, fruits and vegetables comprised 11.6% of the total kilocalories purchased by the panel in 2012 and 21% of all product-level purchases in the panel. The mean proportion of total kilocalories

purchased was 5.79% with a standard deviation of 3.59 (median 5.08%). A wide variety of products were purchased by households, fresh cauliflower, cabbage and broccoli, bananas, apples and pears were particularly popular.

The median proportion of kilocalories from fruit and vegetables purchased decreased with increasing household size, including households with children and in households living in rented accommodation compared to other types of housing tenure (Table 8). In contrast, the average (median) proportion of fruit and vegetables was greater in households where the main household shopper was younger than 39 years or older than 60 years, had a degree or other higher qualification or was of a non-White British ethnicity. It was also greater for households in London, West Midlands, South East England and the East Anglia regions compared to other regions and showed a decreasing gradient with increasing quintiles of area deprivation, lower household incomes and social classes (Appendix 5). Overall, there was a greater average proportion of fruit and vegetable calories consumed across all the household characteristics amongst households in areas with a migrant density of 15% or more.

6.3.3.2 Regression: migrant diversity and household kilocalories of fruits and vegetables

The unadjusted analyses suggested a positive association between migrant density and the proportion of household fruit and vegetable kilocalories purchased for the continuous variable (R^2 =0.0039; df: 1,16,326; F: 64.27; p: 0.0001) – Table 9.

After adjustment for other variables, there was attenuation from 0.02% to 0.01% for each percentage increase in migrant density for the continuous variable (p=0.003) – Table 9.

Other variables also positively associated with the proportion of household fruit and vegetable purchases were the household income, size, households in rented accommodation, of a relatively lower social class or educational qualification and main shoppers of a non-White British ethnicity and younger age compared to the respective reference categories (Appendix 5).

6.3.4 Proportion of kilocalories purchased from diverse foods

6.3.4.1 Descriptive overview of household purchasing food diversity scores

The proportion of kilocalories obtained from diverse foods weighted with the UK Eatwell guide, also known as the evenness scores ranged between 0 and 1 (increasing with greater food diversity). The distribution was fairly normal with a mean dietary diversity score of 0.199 and standard deviation of 0.05 (median 0.198). The mean diversity score increased with household size, the

presence of children with (relatively) higher educational qualifications, household income and socioeconomic class and in postcode districts of a relatively lower area deprivation. In contrast, the mean dietary diversity score was lower amongst renters, where the main shopper was a non-White British ethnicity and postcode districts of a migrant density greater than 15% (Table 8).

6.3.4.2 Regression analysis: migrant diversity and household food diversity scores

In the univariate analyses exploring the association between migrant density and the diversity of products purchased by the panel, there was an inverse association (df: 1,16326; F: 50.03; p:0.0001). suggesting a decrease of 0.3% in the diversity of kilocalories from different food sources with increasing migrant density that remained significant after adjustment for other variables (Table 9).

For the other variables in the model, relative diversity scores increased with household size and categories of income. The relative diversity score was lower in all regions compared to London, amongst main shoppers of non-White British ethnicity (compared to White-British ethnic shoppers), households in rented or mortgaged property (compared to owner occupiers) and those of a lower social class (compared to professional/managerial class)– Appendix 5.

Table 8. Measures of Diet Quality in the Kantar FMCG 2012 panel (n=16,328)

	Proportion of kilocalories						Diversity Scores	
Household Characteristics	'Less Healthy' foods (HFSS)		Ultra-processed foods		Fruit and Vegetable		(UK Eat Well Guide)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Household size								
1 person	54.3	55.1	58.4	59.0	6.7	5.6	0.184	0.179
2 people	54.8	55.1	56.2	56.4	6.0	5.4	0.201	0.198
3 people	54.6	55.1	59.6	60.4	5.4	4.8	0.204	0.203
4+ people	54.6	54.9	61.0	62.0	5.0	4.5	0.206	0.207
Household composition								
Adults	54.7	55.1	57.3	57.6	6.0	5.3	0.196	0.194
Children	54.5	54.9	61.2	62.1	5.2	4.7	0.206	0.206
Main shopper – Age								
Less than 29 years	52.8	53.3	58.9	60.0	6.0	5.2	0.200	0.198

Household Characteristics	Proportion of kilocalories						Diversity score	
	'Less healthy' (HFSS)		Ultra-processed foods		Fruit and Vegetable		(UK Eat Well Guide)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
20- 39 years	53.4	53.6	60.0	61.3	5.7	5.1	0.204	0.205
40 – 49 years	55.3	55.5	61.3	62.0	5.1	4.4	0.199	0.200
50 – 59 years	55.2	55.8	58.5	59.0	5.4	4.7	0.198	0.195
60 – 69 years	54.7	55.0	56.0	56.3	6.2	5.4	0.198	0.197
70+ years	54.5	55.0	55.4	55.7	6.9	6.2	0.197	0.193
Highest education								
Degree or higher	53.2	53.5	55.8	56.3	6.7	5.9	0.203	0.203
Higher Education	55.0	55.3	59.0	59.6	5.7	5.1	0.200	0.201
A-Level	54.8	55.0	59.7	60.7	5.5	4.8	0.202	0.202
GSCE	55.2	55.5	60.1	61.0	5.3	4.6	0.199	0.197
Other education	55.2	56.0	58.3	58.7	5.7	5.0	0.194	0.194
None	55.3	55.5	59.0	59.3	5.3	4.6	0.191	0.189
Region								
London	53.5	53.8	56.9	57.4	6.4	5.5	0.199	0.200
Midlands	54.2	54.6	58.6	59.3	5.8	5.1	0.200	0.198
North East England	54.3	54.7	59.9	60.9	5.4	4.7	0.199	0.197
Yorkshire	54.7	55.1	58.7	59.7	5.5	4.9	0.200	0.200
Lancashire	54.5	54.8	59.0	59.9	5.6	4.8	0.195	0.195
South England	54.6	55.0	58.0	58.8	6.0	5.4	0.203	0.202
Scotland	56.6	56.8	59.7	59.9	5.4	4.7	0.196	0.196
East Anglia	55.1	55.5	58.4	59.2	5.8	5.2	0.200	0.200
Wales/ West England	54.6	55.2	58.5	59.1	5.7	5.0	0.199	0.198
South West	55.2	55.7	57.1	57.2	11.8	11.3	0.202	0.202
UK IMD Quintiles								
IMD Q1Least deprived	54.3	54.8	57.2	57.7	6.2	5.6	0.204	0.202
IMD Q2	54.8	55.1	57.9	58.8	5.9	5.3	0.201	0.202
IMD Q3	54.5	55.0	58.5	59.0	5.9	5.1	0.201	0.201
IMD Q4	54.9	55.2	59.1	59.7	5.6	4.9	0.197	0.196
IMDQ5 Most deprived	54.6	55.0	59.4	60.2	5.4	4.6	0.193	0.191

Household Characteristics	Proportion of kilocalories						Diversity Scores	
	'Less Healthy'		Ultra-processed		Fruit/ Vegetable		UK Eat Well Guide	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Household Tenure								
Owned	54.2	54.6	56.1	56.5	6.5	5.9	0.202	0.201
Mortgaged	54.3	54.6	59.4	60.1	5.7	5.1	0.205	0.206
Rented	55.6	56.1	60.0	61.0	5.0	4.2	0.188	0.186
Other	55.0	55.6	58.1	58.3	5.6	4.9	0.195	0.199
Ethnicity								
White British	54.7	55.1	58.9	59.6	5.7	5.0	0.200	0.200
Non-White British	53.8	54.2	53.5	53.9	6.5	5.7	0.186	0.184
Household income								
£0-£9,999pa	55.5	55.9	59.8	60.6	5.5	4.5	0.184	0.183
£10,00- £19,000pa	55.1	55.6	58.9	59.4	5.7	4.9	0.193	0.190
£20,000-£29,000pa	54.9	55.4	58.2	58.9	5.7	5.0	0.200	0.199
£30,000-£39,000pa	54.2	54.6	58.6	59.4	5.8	5.1	0.204	0.204
£40,000-£49,000pa	54.0	54.1	58.5	59.0	5.9	5.3	0.207	0.207
£50,000 +pa	53.5	53.8	56.7	57.5	6.3	5.7	0.211	0.212
Social Grade								
AB: Professional	53.5	53.7	55.7	56.1	6.7	6.0	0.206	0.207
C1: White collar	54.4	54.8	58.2	59.0	6.0	5.4	0.202	0.202
C2: Skilled manual	55.0	55.4	59.6	60.4	5.3	4.7	0.198	0.199
D: Semi-skilled /manual	55.6	55.8	60.4	61.0	5.0	4.3	0.194	0.194
E: Unskilled	55.8	56.4	60.0	60.4	5.1	4.3	0.214	0.150
Migrant density								
Less than 5%	54.9	55.3	59.0	59.8	5.6	4.9	0.200	0.199
5-9%	54.6	54.9	58.5	59.0	5.8	5.1	0.202	0.202
10-14%	54.6	55.2	58.5	59.3	5.9	5.2	0.200	0.199
15-19%	54.5	54.4	58.4	58.7	5.9	5.3	0.196	0.196
20% +	53.8	54.3	56.7	57.3	6.2	5.3	0.191	0.191

Sources: Kantar FMCG 2012 Panel Extract, Abel et al, 2016, Census 2011

Table 9. Models of Migrant Density and Measures of Diet Quality in Kantar FMCG Households

Dietary measures (outcomes)	Unadjusted Model		Adjusted Model[2]	
	Coefficient (SE)	p	Coefficient (SE)	P
Less healthy' kilocalories[3]	-0.035 (0.007)	<0.001	-0.001(-0.970)	0.913
Ultra-processed kilocalories[3]	-0.083 (0.009)	<0.001	-0.044 (0.012)	<0.001
Fruit and Vegetable kilocalories[3]	0.023 (0.003)	<0.001	0.011 (0.004)	0.003
Diet Diversity Scores	-0.0003 (0.000)	<0.001	-0.0003 (0.000)	<0.001

1. *Source: Kantar FMCG Panel 2012 | non-significant association shown in grey scale*
2. *Model adjusted for region, area deprivation, highest educational qualification, ethnicity and age of main shopper, household income, social class, household size, household composition and household tenure*
3. *Refers to the proportion of kilocalories*

6.4 Discussion

This chapter examined the association between migrant density and household purchasing patterns (classified by four measures of diet quality) in the Kantar FMCG 2012 household panel, which comprised of 16,328 households across the UK. The measures of diet quality included kilocalories from foods high in fat and sugar and ultra-processed products (measures of diet inadequacy) and kilocalories from fruits and vegetables and the diet diversity score adapted to the UK Eatwell Plate (i.e., measures of diet adequacy).

The unadjusted analyses suggested a linear association between migrant density and each of the diet quality measures. However, after adjustment for the individual, household and neighbourhood characteristics, increasing migrant density was associated with an increase in the proportion of kilocalories from fruit and vegetables and a decrease in the proportion of kilocalories from ultra-processed food and diet diversity.

The use of different measures allowed an exploration of different potential pathways and concepts associated with food quality (Alkweri et al, 2015) and the findings were broadly consistent with other published studies.

For example, Gao et al. (2022), in a 10-year longitudinal study of multi-ethnic diets found an association between better diets and neighbourhood food environments. Local food environments may be influenced by migrant practices that may promote and demand the availability of fresh food products. Migrants have been found to cultivate fruits and vegetables for self-sufficiency (Gichuru & Kidwaro, 2014) and for trade (Gerodetti, 2016). Portes (2010) has suggested the impact of migration in the transformation of societies may be linked to size (of migrant population), the duration of movement and the class composition – which could in part account for the establishment of ethnic markets or migrant economies. These ethnic markets, while providing a cultural service to ethnic minorities are also used by non-migrants who through their consumption reinforce traditional values and acquire forms of social and cultural capital (Parzer & Astleithner, 2018).

Furthermore, this is the first reported analysis of dietary diversity using the UK Eatwell guidance. The diversity score describes the relative distribution of the food sources in the diet weighted to ensure 'healthier' foods have a greater weighting (Hanley-Cook et al., 2022).; similar measures have been estimated for the Germany (Thiele & Weiss, 2003;

Drescher et al., 2007) and the United States (Kuczmarsaki et al., 2019). The measure was included to determine if there was an association between the diversity of the local population and diversity of food sources. The results showed an inverse relationship, which was not expected by possibly explained by the relatively higher costs of diverse diets (Conklin et al., 2016) and confirmed by the greater diversity scores for households with higher incomes, educational qualifications and social class. These findings could suggest that other factors such as socio-economic access and or socio-cultural values play a more important role than availability in the diversification of household diets.

In addition, the results are also generally consistent with other UK studies that found more than half of total dietary energy from ultra-processed foods in the population, particularly amongst children and adolescents (Marino et al, 2021; Rauber et al, 2018: Rauber,2021). Ethnicity was also found to be significant predictor of relatively low consumption of ultra-processed foods amongst those of a non-White-Ethnic background (Rauber, 2020) and higher social class (Adams and White, 2015; Rauber, 2020). The purchase of ultra-processed food could be linked to other practices and availability of other resources such as time (Baker & Friel, 2016), cooking skills (Lam and Adams, 2017) and cheaper prices (Gupta et al, 2021).

Strengths and Limitations

The results were strengthened by the large sample size designed to be representative of the British population linked to national Census data, which is accessible and has excellent coverage. The use of the Kantar FMCG panel data, which is of good quality was also an advantage and allowed for the analyses of a relatively large sample even after missing records were excluded (i.e., complete case analyses). In addition, the scale of measurement (postcode district comprising about 700 LSOAs i.e. smallest census unit) was reasonably large to limit the heterogeneity between smaller neighbourhoods that may inadvertently introduce selection bias via areas with dissimilar features (Oakes,2006; Osypuk & Galae, 2007); but could hide intra- and inter-local differences at the micro or macro level, which may be linked to underlying governance structures (White and Borrell, 2011).

Furthermore, the relatively high data quality included individual, household and neighbourhood level confounders and the operationalisation of different measures of diet quality that allowed a robust examination of household purchases in the sample. While there may be concerns about over-adjustment, an attempt was made to identify relevant

confounders in the available data through the presented DAG. However, the difficulty of examining relationships between complex systems at different levels should not be underestimated (Oakes,2006; Kreiger and Davey-Smith, Castellani et al,2018). Further research will be needed to explore potential pathways linked to the higher demand (i.e. purchases) observed with increasing migrant density in this study, which could also be the result of unmeasured confounding.

In addition, the cross-sectional design of the study makes it difficult to quantify the impact of migrant density on food purchasing practices. A longitudinal design, that explores patterns over time could provide more insights on the association between migrant density and household purchasing patterns. This could also address the lag in time between Census results that are provided every ten years.

Moreover, the broad categorisation of migrants and conflation of different socioeconomic, racial, ethnic, geographical backgrounds in the exposure variable could have diminished the potential impact and diluted the effect observed in the models. In this study, there was insufficient data to capture the complexity of settlements, including migrant settlements, that vary with the length of stay, epochs of migration, policy and discrimination; affect 'sense of place', relationships and hierarchies, which determine access to and use of resources. For example, it was not possible from the results to assess the impact of second or third generation migrants, transnational influences on food choice in place nor the changing consumer trends, which include changeable identities and more meals consumed outside the home (Warde, 2007). Stratification of the effects by ethnic or racial groups, the use of additional longitudinal data sources or the use of other methods such as latent class analyses (Abraido-Lanza et al, 2016) could be used to further explore how practices could contribute to the features or the 'sense of place'.

6.5 Conclusion

Cummins et al, (2007) suggested that the exploration of the context and composition of neighbourhoods could produce unique pathways of meaning and practices, that could inform public health initiatives. This study, which explored the association between migrant density and consumption practices (in this case household purchases) found an association between migrant density and the proportion of kilocalories purchased from fruit and vegetables, ultra-processed foods and the diversity of diets. Each of these measures could

point to a direct or indirect impact of migrants in local areas (and the demand for food products) designed to meet other non-nutritional goals, which will be evident in place.

6.6 References

Adams, J., & White, M. (2015). Characterisation of UK diets according to degree of food processing and associations with socio-demographics and obesity: Cross-sectional analysis of UK National Diet and Nutrition Survey (2008-12). *International Journal of Behavioral Nutrition and Physical Activity*, 12(1), 1-12. https://doi.org/10.1186/s12966-015-0317-y

Aggarwal, A., Rehm, C. D., Monsivais, P., & Drewnowski, A. (2016). Importance of taste, nutrition, cost and convenience in relation to diet quality: Evidence of nutrition resilience among US adults using National Health and Nutrition Examination Survey (NHANES) 2007–2010. *Preventive Medicine*, *90*, 184-192.

Alkerwi, A. A. A., Vernier, C., Sauvageot, N., Crichton, G. E., & Elias, M. F. (2015). Demographic and socioeconomic disparity in nutrition: Application of a novel Correlated Component Regression approach. *BMJ Open*, 5(5). https://doi.org/10.1136/bmjopen-2014-006814

Andreeva, V. A., & Unger, J. B. (2014). Host society acculturation and health practices and outcomes in the United States: Public health policy and research implications worldwide. Journal of Public Health Policy, 35(3), 278–291. https://doi.org/10.1057/jphp.2014.9

Baker, P., & Friel, S. (2014). Processed foods and the nutrition transition. *Obesity Reviews*. 15(7), 564-577

Bisogni, C. A., Falk, L. W., Madore, E., Blake, C. E., Jastran, M., Sobal, J., & Devine, C. M. (2007). Dimensions of everyday eating and drinking episodes. *Appetite*, *48*(2), 218-231.

Brown, H., Kirkman, S., Albani, V., Goffe, L., Akhter, N., Hollingsworth, B., ... & Lake, A. (2021). The impact of school exclusion zone planning guidance on the number and type of food outlets in an English local authority: a longitudinal analysis. *Health & Place*, *70*, 102600.

Brunsø, K., Fjord, T. A., & Grunert, K. G. (2002). Consumers' food choice and quality perception. *Working Paper 77*. https://pure.au.dk/portal/en/publications/consumers-food-choice-and-quality-perception

Buckley, M., Cowan, C., & McCarthy, M. (2007). The convenience food market in Great Britain: convenience food lifestyle (CFL) segments. *Appetite*, *49*(3), 600-617.

Castellani B., Rajaram, R., Buckwalter, J.G. et al. (2015). *Place and Health as Complex Systems. A Case-Study and Empirical Test*. Springer. New York

Cresswell, T. (2010). Towards a politics of mobility. *Environment and planning D: Society and Space*, *28*(1), 17-31.

Conklin A.I., Monsivais P., Khew K-T., Wareham N.J., Fououhi N.G. (2016). Dietary diversity, dietary cost, and incidence of type 2 diabetes in the United Kingdom: A Prospective Cohort Study. *PLoS Medicine*, 13(7). https://doi.org/10.1371/journal.pmed.1002085

Cornelsen, L., Mazzocchi, M., & Smith, R. D. (2019). Fat tax or thin subsidy? How price increases and decreases affect the energy and nutrient content of food and beverage purchases in Great Britain. *Social Science & Medicine*, *230*, 318-327.

Diemling, M., & Ray, L. (2014). "Where Do You Draw the Line?" Negotiating Kashrut and Jewish Identity in a Small British Reform Community. *Food, Culture & Society*, *17*(1), 125-142.

Draper, A., & Green, J. (2002). Food safety and consumers: constructions of choice and risk. *Social Policy & Administration*, *36*(6), 610-625.

Drescher, L.S., Thiele, S., Mensink, G.B.M. (2017) A new index to measure healthy food diversity better reflects a healthy diet than traditional measures. *Journal of Nutrition*,137, 647–51.

Fanzo, J. (2016). Food policies' roles on nutrition goals and outcomes: connecting of food and public health systems. In: Steier, G., Patel, K. (eds), *International Food Law and Policy*. Springer, Cham, 213-251. https://doi.org/10.1007/978-3-319-07542-6_9

Gao, X., Engeda, J., Moore, L. V., Auchincloss, A. H., Moore, K., & Mujahid, M. S. (2022). Longitudinal associations between objective and perceived healthy food environment and diet: The Multi-Ethnic Study of Atherosclerosis. *Social Science & Medicine*, *292*, 114542. https://doi.org/10.1016/j.socscimed.2021.114542

Gerodetti, N., & Foster, S. (2016). "Growing foods from home": food production, migrants and the changing cultural landscapes of gardens and allotments. *Landscape Research*, 41(7), 808–819. https://doi.org/10.1080/01426397.2015.1074169

Gichunge, C., & Kidwaro, F. (2014). Utamu wa Afrika (the sweet taste of Africa): The vegetable garden as part of resettled African refugees' food environment. *Nutrition and Dietetics*, 71(4), 270 – 275 https://doi.org/10.1111/1747-0080.12143

Gupta, S., Rose, C. M., Buszkiewicz, J., Ko, L. K., Mou, J., Cook, A., Aggarwal A., & Drewnowski, A. (2021). Characterising percentage energy from ultra-processed foods by participant demographics, diet quality and diet cost: Findings from the Seattle Obesity Study (SOS) III. *British Journal of Nutrition*, *126*(5), 773-781.

Keeble, M., Burgoine, T., White, M., Summerbell, C., Cummins, S., & Adams, J. (2019). How does local government use the planning system to regulate hot food takeaway outlets? A census of current practice in England using document review. *Health & Place*, *57*, 171-178.

Kerr, M. A., McCann, M. T., & Livingstone, M. B. E. (2015). Food and the consumer: could labelling be the answer? *Proceedings of the Nutrition Society*, *74*(2), 158-163.

Koksal, M. H. (2019). Food choice motives for consumers in Lebanon: a descriptive study. *British Food Journal*, 121(11), 2607 – 2619 https://doi.org/10.1108/BFJ-09-2018-0580

Kuczmarski, M. F., Brewer, B. C., Rawal, R., Pohlig, R. T., Zonderman, A. B., & Evans, M. K. (2019). Aspects of dietary diversity differ in their association with atherosclerotic cardiovascular risk in a racially diverse US adult population. *Nutrients*, 11(5). https://doi.org/10.3390/nu11051034

Lam, M. C. L., & Adams, J. (2017). Association between home food preparation skills and behaviour, and consumption of ultra-processed foods: Cross-sectional analysis of the UK

National Diet and nutrition survey (2008-2009). *International Journal of Behavioral Nutrition and Physical Activity,* 14(1). https://doi.org/10.1186/s12966-017-0524-9

Marino, M., Puppo, F., Del Bo', C., Vinelli, V., Riso, P., Porrini, M., & Martini, D. (2021). A systematic review of worldwide consumption of ultra-processed foods: findings and criticisms. *Nutrients,* 13(8),2778. https://doi.org/10.3390/nu13082778

Mohd-Any, A. A., Mahdzan, N. S., & Cher, C. S. (2014). Food choice motives of different ethnics and the foodies segment in Kuala Lumpur. *British Food Journal*, 116(12), 1879-1896 https://doi.org/10.1108/BFJ-07-2013-0170

Millstone, E., & Van Zwanenberg, P. (2002). The evolution of food safety policy–making institutions in the UK, EU and codex alimentarius. *Social Policy & Administration*, *36*(6), 593-609.

Oakes, J.M (2006). Commentary: Advancing neighbourhood-effects research – selection, inferential support and structural confounding. *International Journal of Epidemiology*, 35, 643-47. doi:10.1093/ije/dyl054

Osypuk ,T.L. & Galea, S. (2007). What level macro? Choosing appropriate levels to show place influences in population health In: S. Galea (ed.) *Macrosocial Determinants of Population Health*. Springer. New York. pages 399-435

Parzer, M., & Astleithner, F. (2018). More than just shopping: Ethnic majority consumers and cosmopolitanism in immigrant grocery shops. *Journal of Ethnic and Migration Studies*, *44*(7), 1117-1135.

Rauber, F., Chang, K., Vamos, E. P., da Costa Louzada, M. L., Monteiro, C. A., Millett, C., & Levy, R. B. (2021). Ultra-processed food consumption and risk of obesity: a prospective cohort study of UK Biobank. *European Journal of Nutrition*, 60(4), 2169 – 2180 https://doi.org/10.1007/s00394-020-02367-1

Stroebele-Benschop, N., Depa, J., Gyngell, F., Müller, A., Eleraky, L., & Hilzendegen, C. (2018). Migration background influences consumption patterns based on dietary recommendations of food bank users in Germany. *Journal of Immigrant and Minority Health*, *20*, 1387-1395.

Thiele, S., & Weiss, C. (2003). Consumer demand for food diversity: evidence for Germany. *Food policy*, *28*(2), 99-115.

Wahlqvist, M. L. (2002). Asian migration to Australia: food and health consequences. *Asia Pacific Journal of Clinical Nutrition*, *11*, S562-S568.

Wang, L., & Lo, L. (2007). Global connectivity, local consumption, and Chinese immigrant experience. *GeoJournal*, *68*, 183-194.

White, K., and Borrell, L.N. (2011). Racial/ethnic residential segregation: framing the context of health risk and health disparities. *Health & Place*, 17 (2), 438 - 448

Chapter 7: Synthesis and Conclusion

Background

This mixed methods study was designed to explore the interaction between place and people in an analysis of the impact of migration on local UK food systems using the concepts of place proposed by Henri Lefebvre (1991) and Doreen Massey (2005). Harnessing the assets of migration (or addressing its challenges) requires an understanding of associated networks, actors, structures, which provide a better view of the whole system.

7.1 Summary of Key Findings

Overall, the study showed that local food spaces were a complex social construction of different interactions at various levels, including geographical features of the local place. These interactions were enriched by migration that extended and diversified the scope of local networks. Diversified networks (re)created places that lead to new knowledge and practices (including resistance and conflict), which had the potential to disrupt food systems. An overview of the social interactions in local food systems also informed patterns of food insecurity that could contribute to inequalities and or highlight opportunities to intervene.

This mixed methods study comprised of two main components – a mixed qualitative study comprising an evidence synthesis of ethnic food consumption in host populations, interviews with stakeholders, residents and retailers and photovoice workshops. The quantitative component was a cross-sectional analysis that examined the association between migrant density and purchasing practices (as a spatial practice) amongst a representative sample of households in Britain.

Triangulated findings from each of the study components, using the concepts of Lefebvre (1991) and Massey (2005), showed that difference was defined in various ways and negotiated across a range of levels by various actors in place. This negotiation of difference could be summarised broadly by the generation and re-application of knowledge and forms of capital, which inscribed new values (including the commodification of difference), that (re)shaped spatial practices and local spaces (emplacement). The implications of these findings for public health policy are discussed further in the following section.

The qualitative evidence synthesis that included 14 peer reviewed journals, found a range of international, regional, national and local actors - including migrants or descendants of migrants – were actively involved in the framing of ethnic food -its representation in space, its representational space and spatial practices associated with its consumption. Patterns of social interaction, which involved different actors, institutions and contexts resulted in consumption patterns in the host population, that included commodification, emplacement and pedagogy (describing levels of incorporation into host's consumption practices). Similarly, the qualitative comparative case study of two local areas with different levels of migrant density, identified patterns of social interaction emplaced and represented by the goods in local places that was associated with representations of difference. These patterns varied by migrant type (internal and international) and features of the migrant (size, direction, socio-economic status, rights, country of origin), host (local area, history, attitude, norms) and contexts of interaction over time (government policies, facilities, institutions and amenities including housing, transport, economy, labour market). The quantitative component found an independent association between the migrant density of lower layer super output areas and the proportion of household kilocalories purchased from fruit and vegetables (positive association), ultra-processed food (inverse association) and dietary diversity scores based on the UK eat well guide (inverse association) in cross-sectional models adjusted for household, main shopper and regional characteristics.

7.2 Contributions to Knowledge: The Place-based Approach

Recently, the place-based approach has been adapted by government institutions as a means of exploring the underlying complexity of health inequalities in place (Improvement Service, 2023; UK Government 2022). These approaches use themes to assess place and identify collaborative community, service or civic networks, in order to drive potential outcomes. For example, The UK government guide adapted Labonté's (1992) place-based approach. Labonté's (1992) model, which was underpinned by systems theory, outlines the need to integrate socioenvironmental, psychosocial and biomedical interventions that target the subjective experience of health (not just the objective biomedical measures) as a way of tackling the causes of inequalities.

This thesis complements the UK government's place-based approaches. The thesis highlights patterns of social interactions and incorporates subjective experiences (of food places) using Lefebvre's (1991) and Massey's (2005) concepts of place as an analytical tool. This approach identifies the unique features of place, actors, communities (including virtual and hidden ones), power dynamics associated with interconnections in place, which are diversified with migration. In this study, people's experiences were shaped by differences, i.e., social constructs (Massey, 2005), which were actively produced by government policies, local councils, migrants and non-migrant populations.

The impact of migration on local food places in this study reflected the patterns of difference, distinctions and displacements, negotiated in the everyday lives of local residents. These could be summed up broadly into three themes: the commodification of foods (also places, things), the emplacement of local practices and the embeddedness of knowledge.

Commodification, described as a (re)valuation of a things or form of cultural enrichment for exchange, has been particularly prevalent in Britain from the 1980s (Jackson, 1999). It is a process of (re)inscribing 'use' value (not exchange value), what Lefebvre (1991) referred to as an 'embodied symbolism' associated with covert and overt meanings (i.e., representational space). Commodification is thus a social construction that is context dependent, which (re)produces forms of interaction, 'including social-material interactions' and representations of space accessed through various forms of - cultural, economic or social - capital (Jackson, 1999; Sayer, 2004). This process of commodification is mediated by several actors across levels that enable but also limit consumer experience (Thrift, 2004). In this study, it was applied to goods, places and services, which extended beyond 'ethnic' or 'migrant' distinctions.

Although much has been written about the process of commodification and its links to capital, scholars (Jackson 2004; Thrift, 2004; Sayer, 2004) have urged for more attention to the changing meanings, social relations and associated inequalities (re)produced by the process of commodification. This study echoes this observation, noting that inequalities extend beyond notions of access, to the tangible (and intangible) differences expressed by social interactions engendered in place. A critical analysis of the social interactions could identify the subtle everyday negotiations of difference (Nielsen & Winther, 2020), meanings and the unintended impacts of the various forms of commodification on health disparities

i.e., not restricted to 'ethnic' goods; it could also highlight potential intervention opportunities (Labonté et al., 2005; Jackson, 1999, 2004; Sayer, 2003).

Emplacement is described as the reorganisation of space (re)produced from the dynamic intersections of power. The process of emplacement involves various actors, who negotiate various forms of identity and boundaries of belonging, in response to changing opportunity structures. Although the term is often qualified by migrant place-making, a place-based frame can reveal diverse forms of 'belonging' enacted in everyday settings (Glick-Schiller & Çağlar, 2013) as was shown in this study.

Findings from the qualitative case-study and the review identified the active involvement of place features, labour markets, governments (local to international) and flows of people that shaped the patterns of settlement and interaction observed in places. The quantitative component also pointed to the independent association between spatial household purchasing practices and the diversity in the patterns of (migrant) belonging enacted in place. These networked interactions were diverse e.g., spontaneous ('one-time'), rhythmic (habitual, diurnal), superficial, overt, covert and reflected underlying – tangible and intangible – needs that underpinned the complexity of local food systems (Biehl, 2022). For example, both case study areas had local 24-hour shops, which allowed for flexibility in food provisioning (particularly noted as a resource by participants of a migrant background).

The complexity of emplacement as a product of social networks undermines broad spatial characterisations of places as 'food deserts' or 'unhealthy' food places; rather it invites a critical review of how these spaces emerge, what (un)met needs are reflected and which inequalities are (re)produced. In Hull, the analyses pointed to a concentration of poverty, (including fuel poverty) amongst displaced fishermen communities that limited choice (i.e., not necessarily lack of knowledge or skill but of choice); a similar observation was reported in deprived areas of Hackney (Bowyer et al., 2006). Further mapping and investigation of these potential causes could identify relevant actors, institutions and discourses that could be used to design intervention programs, tailored to the needs of local populations.

The third main finding of this thesis was how different types of social interaction fostered spatial practices. Lefebvre (1991) noted in his work that spatial practices were a function of both capability and performance. Diverse populations from different food systems brought

different experiences and understandings of food, which changed the types of available markets and demand for foods. For migrants moving from traditional to modern food systems, fresh fruit and vegetables are recognisable raw ingredients that provide the basis for preparing familiar meals, particularly since food is an important part of identity. This may explain the lower preference for processed foods, which are often branded and require associated knowledge/tastes. Furthermore, participants in the study who had developed a haptic experience of foods (from constant performance or exposure in traditional food systems) were also more likely to recognise good quality food.

Social interactions in place also fostered the competence (or confidence) about food (i.e., knowledge about how to purchase, process or store food), referred to as 'food literacy'. The childhood home, 'nan' or 'mother's kitchen' was a familiar reference as were other references to friends, the media (including magazines, famous TV chefs) and recipe books. These were all sources of information that exposed individuals to new knowledge and or skills that was adopted and or adapted based on individual need. Opportunities that allow the development of sensory food literacy – experiences which allow touch, taste, smell – have the potential to drive the demand for good quality food.

Lefebvre (1991) and Massey's (2005) complementary concept of place, provides an analytical tool for exploring inequalities through the exploration of social interactions and gives different views of experiences in the food system. Coulson and Milbourne (2021) propose the need for such political framing of the food system, which acknowledges the complexity of the 'plurality', the spatio-temporality and scalar basis for framing food injustices. A theoretical frame which allows connections between individual/community assets, the distributive patterns of food (and non-food) insecurity, sustainability and socio-economic/structural factors (Coulson & Milbourne, 2021; Friedli, 2013), spatial practices (Blue et al, 2014) including 'normalised' exploitative practices (Coulson & Milbourne, 2021); legitimises consumer rights and recognises multi-scalar dynamics of power across spatial geographies (Colas & Edwards, 2022; Sonnino et al., 2016, Labonté et al, 2005; Massey, 2005). This frame extends the science (and art) of population health beyond disease outcomes and strengthens food system resilience through acknowledgement and action aimed at systemic injustices (Labonté et al, 2005) such as the precarity of labour,

environmental sustainability (Lang & Rayner, 2012) and 'commodification of the commons' (Coulson & Milbourne, 2021; Friedl, 2013; Sonnino & Coulson, 2019).

7.3 Implications for Public Health Policy

Migration increases the diversity of places and exposure to difference. This diversity has (re)produced Hackney and is changing the face (and experience) of residents in Hull. However, migration – internal or international - is often part of other on-going structural, political and economic transformation that impacts the level, depth and outcomes of social interactions. This brings challenges but also great opportunities.

The diversity in the population, which adds to the complexity of local (food) systems in places, should be reflected in the multiplicity of approach. Lang et al. (2012) have argued for an 'ecological' public health and a de-fragmentation of disciplinary silos – an underlying theme in the concepts of place proposed by both Lefebvre (1991) and Massey (2005).

The local public health officers at both case-study sites, had clear remits in relation to national or regional policies that were focused on public health. However, this focus (seemed to), obscure potential opportunities to gather information or work collaboratively across departments within the same council. For example, environments (food hygiene), markets, housing, transport were all separate units that collated different types of information or were linked to different networks. Each unit had its own 'place' and nexus of power in the local system, which directly or indirectly impacted the food system and could be leveraged by public health for better population health. Harnessing the collaborative potential in the multiplicity (of governance) could allow better identification and framing of local issues.

Furthermore, the everyday interactions of local residents comprised the integration of multiple contexts. The nutritional value of foods, that is often underlined in public health messages, was one of many components considered in the negotiation of food places. More attention needs to be paid to the multiplicity of representational space (space as it is 'lived') to understand spatial practices (space as it is 'perceived'), which could be used to design the representations of space. Incorporating the diverse contexts, as used by individuals in their everyday lives, could provide a better framework for intervening in complex systems.

For example, in Hull, zoning laws to regulate planning in the food environment at the time of the study (but not in Hackney) were used to restrict the set-up of new take-away places. Although this action was based on national evidence, there is also evidence from both longitudinal (Green et al., 2018) and cross-sectional studies (that include additional sources of 'unhealthy' food such as supermarkets - see Williams et al, 2014; Howard Wilsher et al., 2016), which suggest little association between the density of food places and childhood obesity. Furthermore, an ethnographic study of young people in a deprived area of London indicated several factors and meanings associated with different eating events (associated with different places) that highlighted the limitations of zoning interventions (Lofink, 2012). The findings from this mixed-method study also highlighted various (social) needs met by these local takeaway places. Local takeaways in Hull also provided meeting places (for migrant communities such as refugees/asylum seekers), convenience or savings associated with fuel costs. An evaluation of the scheme and further exploration of the social interactions that produce local takeaways could inform effective interventions.

Additionally, the public health framing of 'healthy' food could be reviewed. Many measures of diet quality focus on the presence (or absence) of fat that was reflected in the discourse of the study participants (particularly those in Hull). The focus on obesity and the commoditisation of its management (i.e., new products or weight loss regimes) gives it a prominent place in public health discourse that may hide other growing mental health risks associated with attitudes to food [in particular the rising rates of eating disorders in the UK – O'Logbon et al., 2022; Smink et al., 2012). Other representations of 'healthy' food could be considered to (re)create environments that promote health. For example, planting fruit trees in local (public) spaces or local food growing competitions in schools.

Another example of the representation of 'healthy' eating is the availability of culturally appropriate foods. In both Hull and Hackney, the growing availability of culturally appropriate foods was noted. However, access to these goods was dependent on capital, often economic capital due to the high cost of these 'cultural' goods (particularly by those with a migrant background) or knowledge capital – for those without an understanding of how to use these products. This was noted in both case-study areas. While the greater *availability* of foods ("healthy" foods even) is linked to food security, it is not sufficient. Access is usually determined by various forms of capital - economic, social and cultural – that

also needs to be facilitated in order to address inequalities. In Hackney, this could include measures to maintain the 'cultural' relevance of the Ridley Road market for its public health value (i.e., access to affordable food stuff).

7.4 Study Limitations

This thesis aimed to explore the impact of migration on local food systems using the concepts of place proposed by Lefebvre (1991) and Massey (2005) in a mixed study design that comprised of three components. Although the original design was complementary, different definitions and scales of enquiry were employed for each component of the study.

For example, the qualitative components included subjective and nuanced definitions of 'migration' that captured the (changing) relational negotiations of mobility and difference in everyday settings, while the quantitative component, limited by the cross-sectional study design and available data, comprised of pre-determined categories (based on non-UK country of birth). Furthermore, the limitations of using administrative data, precluded the selection of households as the basis for analysis in the quantitative component not place, as was used in the qualitative component. This approach, however allowed the quantitative component to focus on the objective meanings associated with spatial household purchasing practices as a product of social interactions in place.

Furthermore, the scope of the qualitative study, which was focused on food places, included a broad range of participants using a range of mediums. Due to COVID restrictions, data collection methods were revised to include a mix of face-to-face, virtual (Zoom) and telephone interviews and photovoice workshops. As observed in other studies, the virtual modes of data collection (telephone or online Zoom) were simpler and more convenient; there were minimal issues related to connectivity, sound or security (Irvine, 2011). For the photovoice workshops recruitment took place with existing groups where Zoom was used as a medium of regular communication. Hence recruited participants were already familiar with virtual modes of discussion and other group members (which may have eased group dynamics) and none of the usual participants would have been excluded due to lack of digital connectively (as this was the usual mode of communication and was adapted for the study due to the COVID restrictions). It should be noted however that the virtual sessions

were relatively shorter than the face-to face sessions, particularly for the mother-toddler group (as the workshops were included as part of the hour-long weekly activities), which may have impacted the depth of discussion (Irvine, 2011). However, the format of the discussions allowed mothers with childcare or other responsibilities to have their voices heard; important discussions on infant/toddler issues that preceded the workshops and photo-elicitation exercises also provided informal rapport (Irvine, 2011). Follow up enquiries made directly with participants (via group chat/texts/calls or as part of the exhibition planning session) ensured that pertinent issues were included in the study.

7.5 Conclusions

One of the current challenges of public health is to ensure appropriate evidence sufficient for policy needs (Parkhurst, & Abeysinghe, 2016). Policy supported by robust and critical evidence that reflects multiple frames. There is also a need for policy that theoretically examines the complexity of contexts (Galea & Annas, 2016); subjective experiences including social justice, values, and equity and underlying socio-economic and environmental factors, across several levels (Galea & Annas, 2016; Parkhurst, & Abeysinghe, 2016; Walt et al., 2008). This challenge is manifest in the food system, characterised by the ambivalence of diverse actors, interests and power, which also provide potential intervention opportunities.

In this thesis, I used Lefebvre and Massey's concepts to explore the impact of migration on local food systems through an analysis of social interactions at the interstices of place. The objective analysis of spatial practices showed an independent association between migrant density and household purchasing patterns of diet quality. The qualitative component buttressed these findings to demonstrate a network of interactions, which shaped the (re)production of places – their activities, meanings and everyday practices. The findings highlighted several potential frames - food (and non-food) - through which migration shaped place and vice-versa. These frames exposed the needs of the population through their negotiation of difference, definition of boundaries (or distinctions) and everyday displacements that embed inequalities. Recognising the diverse frames could inform local public health problematisations of places, engagement and or collaborative strategies for promoting population health.

7.6 References

Blue, S., Shove, E., Carmona, C., & Kelly, M. P. (2016). Theories of practice and public health: understanding (un) healthy practices. *Critical public health*, *26*(1), 36-50.

Biehl, K.S. (2022). Spectrums of in/formality and il/legality: negotiating business and migration-related statuses in arrival spaces. *Migration Studies*. 10 (2),112- 129

Colás, A., & Edwards, J. (2022). The everyday economy and the right to food. *The Political Quarterly*, *93*(4), 675-682.

Coulson, H., & Milbourne, P. (2021). Food justice for all? searching for the 'justice multiple' in UK food movements. *Agriculture and Human Values*, *38*(1), 43-58.

Friedli, L. (2013). 'What we tried hasn't worked': the politics of assets-based public health. *Critical Public Health*, 23(2), 131-145

Galea, S. & Annas, G.J. (2016). Aspirations and strategies for Public Health. *Journal of the American Medical Association, 315(7), 655-656*

Green, M. A., Radley, D., Lomax, N., Morris, M. A., & Griffiths, C. (2018). Is adolescent body mass index and waist circumference associated with the food environments surrounding schools and homes? A longitudinal analysis. *BMC public health*, *18*, 1-8.

Glick-Schiller, N., & Çağlar, A. (2013). Locating migrant pathways of economic emplacement: thinking beyond the ethnic lens. *Ethnicities*, 13(4), 494–514. https://doi.org/10.1177/1468796813483733

Howard Wilsher, S., Harrison, F., Yamoah, F., Fearne, A., & Jones, A. (2016). The relationship between unhealthy food sales, socio-economic deprivation and childhood weight status: results of a cross-sectional study in England. *International Journal of Behavioral Nutrition and Physical Activity*, *13*, 1-8.

Irvine, A. (2011). Duration, dominance and depth in telephone and face-to-face interviews. A comparative exploration. *International Journal of Qualitative Methods*, 10(3), 202-220

Jackson, P. (2004). Local consumption cultures in a globalizing world. *Transactions of the Institute of British Geographers*, *29*(2), 165-178.

Jackson, P. (1999). Commodity cultures: the traffic in things. *Transactions of the Institute of British Geographers*, *24*(1), 95-108.

Labonté, R., Polanyi, M., Muhajarine, N., McIntosh, T., Williams A. (2005). Beyond the divides: towards critical population health research. *Critical Population Health*, 15(1), 5-17

Lang, T., & Rayner, G. (2012). Ecological public health: the 21st century's big idea? An essay by Tim Lang and Geof Rayner. *BMJ (Clinical research ed.),* 345, e5466. https://doi.org/10.1136/bmj.e5466

Lefebvre, H. (1991). *The Production of Space* (translated by D. Nicholson-Smith). Malden: Blackwell Publishing

Lofink, H. E. (2012). The worst of the Bangladeshi and the worst of the British: Exploring

eating patterns and practices among British Bangladeshi adolescents in east London. *Ethnicity and Health*, 17(4), 385–401. https://doi.org/10.1080/13557858.2011.645154

O'Logbon, J., Newlove-Delgado, T., McManus, S., Mathews, F., Hill, S., Sadler, K., & Ford, T. (2022). How does the increase in eating difficulties according to the Development and Well-Being Assessment screening items relate to the population prevalence of eating disorders? An analysis of the 2017 Mental Health in Children and Young People survey. *International Journal of Eating Disorders*, *55*(12), 1777-1787.

Massey, D., (2005). *For Space*. Sage. London, California, New Delhi.

Nielsen, R. S., & Winther, A. H. (2020). The complexity of diversity in reality: Perceptions of urban diversity. *Urban Studies*, *57*(14), 2817-2832.

Parkhurst, J. O., & Abeysinghe, S. (2016). What constitutes "good" evidence for public health and social policy-making? From hierarchies to appropriateness. *Social Epistemology*, *30*(5-6), 665-679.

Public Health England (2021). Place based approaches for reducing health inequalities. https://www.gov.uk/government/publications/health-inequalities-place-based-approaches-to-reduce-inequalities/place-based-approaches-for-reducing-health-inequalities-main-report (accessed July 2024)

Improvement Service (2023). Place-based Programmes. https://www.improvementservice.org.uk/products-and-services/planning-and-place-based-approaches/planning-for-place-programme/place-based-approaches (accessed July 2024).

Sayer, A. (2003). (De) commodification, consumer culture, and moral economy. *Environment and Planning D: Society and Space*, *21*(3), 341-357.

Smink, F. R., Van Hoeken, D., & Hoek, H. W. (2012). Epidemiology of eating disorders: incidence, prevalence and mortality rates. *Current psychiatry reports*, *14*(4), 406-414.

Thrift, N. (2006). Re-inventing invention: new tendencies in capitalist commodification. *Economy and Society*, *35*(02), 279-306.

Walt, G., Shiffman, J., Schneider, H., Murray, S. F., Brugha, R., & Gilson, L. (2008). 'Doing'health policy analysis': methodological and conceptual reflections and challenges. *Health Policy and Planning*, *23*(5), 308-317.

Williams, J., Scarborough, P., Matthews, A., Cowburn, G., Foster, C., Roberts, N., & Rayner, M. (2014). A systematic review of the influence of the retail food environment around schools on obesity-related outcomes. *Obesity Reviews*, *15*(5), 359-374.

Appendix 1: Ethical approval

London School of Hygiene & Tropical Medicine
Keppel Street, London WC1E 7HT
United Kingdom
Switchboard: +44 (0)20 7636 8636

www.lshtm.ac.uk

Observational / Interventions Research Ethics Committee

Miss Omotomilola Ajetunmobi

LSTHM

22 November 2019

Dear Omotomilola,

Study Title: The impact of migration on local (UK) food systems - opportunities and challenges for public health (Short title: Changing places, people and food)

LSHTM ethics ref: 17810

Thank you for your application for the above research, which has now been considered by the Observational Committee.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Conditions of the favourable opinion

Approval is dependent on local ethical approval having been received, where relevant. Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document Type	File Name	Date	Version
Investigator CV	CV _Dr Matt Egan	29/08/2019	1.0
Investigator CV	CV_Dr Marks	29/08/2019	1.0
Investigator CV	CV_ Dr Nicolas Berger	29/08/2019	1.0
Investigator CV	CV_Ajetunmobi O	02/09/2019	1.0
Local Approval	Email consent for Kantar FMCG from Dr Cornelsen	10/09/2019	1.0
Protocol / Proposal	Appendix 1_Systematic Review Protocol	13/09/2019	1.0
Protocol / Proposal	Appendix 2_Study information sheet_Resident	13/09/2019	1.0
Protocol / Proposal	Appendix 3_Study information sheet_Retail	13/09/2019	1.0
Protocol / Proposal	Appendix 4_Study information sheet_Key Informant	13/09/2019	1.0
Protocol / Proposal	Appendix 5_Study Consent form	13/09/2019	1.0
Protocol / Proposal	Appendix 5a_Study Consent form_Photovoice exercise	13/09/2019	1.0
Protocol / Proposal	Appendix 6_Interview guide_Resident	13/09/2019	1.0
Protocol / Proposal	Appendix 7_Interview guide_Retail	13/09/2019	1.0

Protocol / Proposal	Appendix 8_Interview guide_LA	13/09/2019	1.0
Protocol / Proposal	Appendix 9_Information and Guidance sheet_PHOTOVOICE	13/09/2019	1.0
Protocol / Proposal	Appendix 10_ PHOTOVOICE protocol	13/09/2019	1.0
Protocol / Proposal	Appendix 11_Recruitment poster	13/09/2019	1.0
Protocol / Proposal	Appendix 12_ Study Consent _ Photovoice copyright	13/09/2019	1.0
Protocol / Proposal	Appendix 13_Study Consent form_Photvoice	13/09/2019	1.0
Protocol / Proposal	Study Protocol_Migration and Food systems	13/09/2019	1.0
Advertisements	Appendix 11_Recruitment poster	13/09/2019	1.0
Information Sheet	Appendix 2_Study information sheet_Resident	13/09/2019	1.0
Information Sheet	Appendix 3_Study information sheet_Retail	13/09/2019	1.0
Information Sheet	Appendix 4_Study information sheet_Key Informant	13/09/2019	1.0
Information Sheet	Appendix 5_Study Consent form	13/09/2019	1.0
Information Sheet	Appendix 5a_Study Consent form_Photovoice exercise	13/09/2019	1.0
Information Sheet	Appendix 9_Information and Guidance sheet_PHOTOVOICE	13/09/2019	1.0
Information Sheet	Appendix 12_ Study Consent _ Photovoice copyright	13/09/2019	1.0
Information Sheet	Appendix 13_Study Consent form_Photvoice	13/09/2019	1.0

After ethical review

The Chief Investigator (CI) or delegate is responsible for informing the ethics committee of any subsequent changes to the application. These must be submitted to the Committee for review using an Amendment form. Amendments must not be initiated before receipt of written favourable opinion from the committee.

The CI or delegate is also required to notify the ethics committee of any protocol violations and/or Suspected Unexpected Serious Adverse Reactions (SUSARs) which occur during the project by submitting a Serious Adverse Event form.

An annual report should be submitted to the committee using an Annual Report form on the anniversary of the approval of the study during the lifetime of the study.

At the end of the study, the CI or delegate must notify the committee using an End of Study form.

All aforementioned forms are available on the ethics online applications website and can only be submitted to the committee via the website at: http://leo.lshtm.ac.uk

Additional information is available at: www.lshtm.ac.uk/ethics

Yours sincerely,

[redacted]

Professor Jimmy Whitworth
Chair

ethics@lshtm.ac.uk | http://www.lshtm.ac.uk/ethics

London School of Hygiene & Tropical Medicine
Keppel Street, London WC1E 7HT
United Kingdom
Switchboard: +44 (0)20 7636 8636

www.lshtm.ac.uk

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

Observational / Interventions Research Ethics Committee

Miss Omotomilola Ajetunmobi
LSTHM

13 May 2021

Dear Miss Omotomilola Ajetunmobi,

Study Title: The impact of migration on local (UK) food systems - opportunities and challenges for public health (Short title: Changing places, people and food)

LSHTM Ethics Ref: 17810 - 1

Thank you for your letter responding to the Observational Committee's request for further information on the above amendment to research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above amendment to research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

Approval is dependent on local ethical approval for the amendment having been received, where relevant.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document Type	File Name	Date	Version
Covering Letter	Amendment _ Clarification Mar2021	04/03/2021	1.0
Covering Letter	Covering letter_Response to Ethics Amendment250221	04/03/2021	1.0
Other	Appendix 11_Recruitment poster - amendment_vs2	10/05/2021	2.0
Other	PHOTOVOICE Participant Information Sheet _Amendment vs2	10/05/2021	2.0
Other	Amendment _ Clarification May2021	10/05/2021	2.0
Other	Covering letter_Response to Ethics Amendment050521	10/05/2021	2.0

After Ethical Review

The Chief Investigator (CI) or delegate is responsible for informing the ethics committee of any

subsequent changes to the application. These must be submitted to the Committee for review using an Amendment form. Amendments must not be initiated before receipt of written favourable opinion from the committee.

The CI or delegate is also required to notify the ethics committee of any protocol violations and/or Suspected Unexpected Serious Adverse Reactions (SUSARs) which occur during the project by submitting a Serious Adverse Event form.

An annual report should be submitted to the committee using an Annual Report form on the anniversary of the approval of the study during the lifetime of the study.

At the end of the study, the CI or delegate must notify the committee using an End of Study form.

All aforementioned forms are available on the ethics online applications website and can only be submitted to the committee via the website at: http://leo.lshtm.ac.uk

Additional information is available at: www.lshtm.ac.uk/ethics

Yours sincerely,

Professor Jimmy Whitworth

Chair

ethics@lshtm.ac.uk

http://www.lshtm.ac.uk/ethics

Appendix 2: Consent for use of Kantar FMCG Panel 2012 dataset

RE: Kantar data - access (Quantitative questions)

Laura Cornelsen

Fri 09/08/2019 16:39

To: Nicolas Berger <Nicolas.Berger@lshtm.ac.uk>; Omotomilola Ajetunmobi <Tomi.Ajetunmobi@lshtm.ac.uk>

Hi Tomi,

I am happy to give you access to the 2012 Kantar data for the purpose of the analyses in your PhD. Please follow what Nicolas has said in terms of accessing/using the data only from the V drive (which we will organise access for you) and do not copy the data (or any versions of it) onto the PC C-drive or any other device (laptop, external drive etc.).

Good luck with the work!

Best,
Laura

Appendix 3: Qualitative Evidence Synthesis Review Protocol

Aim

The aim of this review is to identify the experiences, views, attitudes and perceptions of host communities to ethnic food. The review will incorporate a qualitative design exploring qualitative accounts of the views, experiences, attitudes, perceptions and practices of the host population in relation to migrant foods and practices.

Background

Acculturation, describes the change to an individual or group or society resulting from the adoption of values, customs, beliefs and behaviours of either or both groups following cultural transmission; which may be direct (derived from non-cultural causes such as ecological or demographic modifications), delayed or reactive (adaptive change that rejects dominant cultural norms). Although an anthropological term, it has been used to explain comparative social and cultural adaptations in different disciplines including psychology (Berry, 2003) and diet and health-related behaviour (Satia-Abouta et al, 2002), mainly in the immigrant population. Little is however known of the acculturative changes that take place in the 'host' population (Dinh and Bond, 2008; Andreeva and Unger, 2014) also known as the 'receiver', 'mainstream' or 'dominant' culture (Berry, 2003).

The host population can adapt its social processes and structures to mediate immigrant emplacement. This may result in a change of the host population, in response to the immigrants (Tseng and Yoshikawa, 2008); defined as the 'a complex, multifactorial process reflecting the attitudinal and behavioural impacts of immigrants on the host society' through a multicultural view (Andreeva and Unger, 2015). These changes may result from direct or indirect contact with immigrants (Andreeva and Unger, 2015), across a range of settings including individual, community, social networks, institutional and policy, historical and power contexts that should be considered to give a wholistic view of the phenomenon (Tseng and Yoshikawa, 2008).

Globalisation, travel and increasing diversity through migration have provided platforms for inter-cultural contact. In particular, the movement of food and food cultures have played a significant role in shaping dietary behaviour and other health/lifestyle practices of host communities. This is evident in the increasing diversity of the markets, changing patterns of fruit and vegetable consumption and widespread consumption of 'ethnic' food products (Andreeva and Unger, 2014).

Further evidence is required to understand migrant contribution in shaping the host food systems that could be used to inform public health strategies to improve population health.

Inclusion criteria:

Academic (peer-reviewed) journal articles published in the English language that meet the following criteria.

Phenomena of interest

The experiences, views, attitudes and perceptions of host communities to ethnic food.

This review aims to examine the influence of contextual factors, practices and impacts of exposures to food and food practices associated with immigration on host communities. It will include studies that examine the determinants of food choice and the food experiences of members of the host population following immigration of members from another culture or ethnic group.

Population

The host community may be defined as the receiving group or culture that provide the governance, social and economic structures into which immigrants settle or live. It has also been termed 'dominant', 'mainstream' or 'receiver' community/population. This will include studies of populations that are ethnically homogenous (i.e. one dominant ethnic group) and a mixed or multi-ethnic host population (i.e. comprising few or no dominant ethnic group that may result from historical migrant settlements) to allow for a differentiation between 'host' and 'migrant' communities that is contextually relevant.

Type of outcome

The outcomes will include qualitative evidence of reported preferences, experience and context of consumption and relevant public health outcomes.

Types of studies

This review will include studies of experiences and attitudes that use qualitative methods e.g., participant observations, in-depth and semi-structured interviews, and focus groups.

Search strategy

The search strategy will include the following databases, PROQUEST, MEDLINE, International Bibliography of the Social Sciences (IBSS), ISI Web of Science and the ABI/INFORM Global data bases (as advised by subject librarians).

Summary of search terms

'Ethnic', 'Consump*', 'Food', 'Diet', 'eat*', 'nutrition', , 'Mainstream', 'Dominant', 'Host', 'Receiver', 'native', 'national', 'Acculturat*', 'Reverse acculturation', adaptation', 'integration', 'assimilation' 'migrant', 'migra*', 'immigrant', 'immigrat*', 'refugee', 'asylum seeker', 'attitude', 'experience'

Assessment of methodological quality

Papers selected for review will be assessed by two independent reviewers (O Ajetunmobi and N Bennet) and disagreements resolved through discussion or the assessment of a third reviewer. Qualitative articles will be appraised for methodological quality using standardised instruments from the Joanna Briggs Institute Qualitative and Review Instrument (https://joannabriggs.org/critical_appraisal_tools - accessed August, 2019).

Data Extraction

For each appraised paper, the following categories of data will be extracted: journal, author, year, aims, methodology, theoretical framework/model, sample – country, sample – immigrant population, data collection method, data analyses, data interpretation, transferability, themes (for qualitative analyses).

Data Analysis and Synthesis

The findings from the qualitative studies will be pooled using meta-ethnography methods described by Britten et al, 2012. Extracts of the study findings i.e. interpretations and meanings (level 1) which will be categorised according to their quality and basis of similarity to other studies (level 2) to generate a comprehensive set of synthesised findings (level 3). It will build on the three strategies outlined by Noblit and Hare (as described in Dixon-Woods et al, 2005) to identify similarities between key metaphors, themes or concepts, contradictions between them and general lines of agreement. For the quantitative studies, there is likely to be a high degree of heterogeneity between studies, which could be synthesised using a narrative synthesis. If appropriate, a visual synthesis of the data summarising the study details e.g. an adaptation of effect direction plot will be included, as described by Thomson and Thomas et al, 2013.

References

Andreeva, V. A., & Unger, J. B. (2014). Host society acculturation and health practices and outcomes in the United States: Public health policy and research implications worldwide. Journal of Public Health Policy, 35(3), 278–291. https://doi.org/10.1057/jphp.2014.9

Andreeva, V. A., & Unger, J. B. (2015). Determinants of Host Society Acculturation and Its Relationship with Health Behaviors and Outcomes: A New Research and Intervention Framework. Journal of Immigrant and Minority Health, 17(5), 1420–1426. https://doi.org/10.1007/s10903-014-0104-x

Berry, J. W. (2008). Globalisation and acculturation. International Journal of Intercultural Relations. https://doi.org/10.1016/j.ijintrel.2008.04.001

Dinh, K. T., Weinstein, T. L., Nemon, M., & Rondeau, S. (2008). The effects of contact with Asians and Asian Americans on White American college students: Attitudes, awareness of racial discrimination, and psychological adjustment. American Journal of Community Psychology, 42(3–4), 298–308. https://doi.org/10.1007/s10464-008-9202-z

Dixon-Woods, M., Agarwal, S., Jones, D., Young, B., & Sutton, A. (2005). Synthesising qualitative and quantitative evidence in reviews: a review of methods. Journal of Health Services Research and Policy, 10(1), 45–53.

Satia-Abouta, J., Patterson, R. E., Neuhouser, M. L., & Elder, J. (2002). Dietary acculturation: Applications to nutrition research and dietetics. Journal of the American Dietetic Association. https://doi.org/10.1016/S0002-8223 (02)90247-6

Thomson, H., Thomas, S., Sellstrom, E., and Pettigrew M., (2013). Housing improvements for health and associated socioeconomic outcomes. Cochrane Systematic Review – Intervention. https://doi.org/10.1002/14651858.CD008657.pub2

Tseng, V., & Yoshikawa, H. (2008). Reconceptualizing acculturation: Ecological processes, historical contexts, and power inequities: Commentary for AJCP special section on "The other side of acculturation: Changes among host individuals and communities in their adaptation to immigrant population. American Journal of Community Psychology, 42(3–4), 355–358. https://doi.org/10.1007/s10464-008-9211-y

Appendix 4: Research Consent Forms and Study Information Sheets

Consent form

Please tick **[√]** your preference (YES/NO) and write your initial in the boxes below:

Use of information for this Project only	YES	NO	Initial
I have read and understood the information sheet.			
I have received enough information about the study.			
I have been given opportunity to ask questions.			
I agree to take part in the study. My participation will include being interviewed and recorded.			
I give permission for my words to be used in direct quotations (anonymous) from my participation in the research and its publications. I know I shall not be identified from these quotations.			
I give permission for photographs of my work or activities during my participation in the study to be used in the research and its publications. I know I shall not be identified from these photographs.			
I give permission for observations of my work or activities during my participation in the study to be used in the research and its publications.			
I understand that my participation is voluntary and I am free to withdraw at any time without giving any reason.			
I understand that details of my participation up to the time of withdrawal will be stored anonymously and may be used in the final analysis.			
I understand that my personal details (e.g. personal number or address) will not be shared outside the project team or used for other purposes.			
I agree that my details may be stored for future contact about the study.			
Use of information beyond this Project			
I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the information requested in this form.			
I give permission for the use of my words in other publications, reports or research outputs only, if my confidentiality is preserved as requested in this form**.**			

Participant

_____ _____ _____

Name (BLOCK LETTERS) Signed Date

Participant Notes /changes/comments (add notes overleaf or on extra sheets as required)

_____ _____ _____

Add comments Signed Date

Investigator

'TOMI AJETUNMOBI _____ _____

Name (BLOCK LETTERS) Signed Date

Investigator Contact Details:
'Tomi Ajetunmobi
Research Student, Faculty of Public Health Policy, London School of Hygiene & Tropical Medicine, 15 – 17 Tavistock Road, London, WC1H 9SH Email: tomi.ajetunmobi@lshtm.ac.uk |Telephone: 0207 958

Changing places, people and food

Participant Information Leaflet

My name is 'Tomi. I am a research student at the London School of Hygiene School of Hygiene and Tropical Medicine.

This leaflet will provide information about my study: 'Changing places, people and food'.

You can discuss this leaflet with others and ask questions to help you decide if you would like to take part in the study.

You are free to decide whether or not to take part.

Thank you!

What is the study about?

This research study is about ***food spaces in your local area***.

The study is funded by the National Institute of Health Research (NIHR) School of Public Health Research and organised by the London School of Hygiene and Tropical Medicine (LSHTM). The study has received ethical approval from the LSHTM Ethics Committee (Reference: 17810).

Why is this important?

Everybody eats, so food is important. It is also one of the ways we express who we are.

People carry their food cultures – the knowledge and skills of their foods – when they travel or move to the new area, sharing what they know and learning new things.

This study aims to understand how people and their foods change places and how places change people's eating habits in different parts of England.

What do I have to do?

You are invited to take part in the study because your local area is part of the study.

Your participation will contribute to information about food and food places in your local area.

To agree to take part, you will need to sign a consent form (LSHTM ethics requirement) and will be asked questions about your work in the local area and views about the people, food and food spaces in the local area and how this affects your work/business.

It may also involve the researcher observing and taking photographs to show how you carry out your business, as part of your normal day. Any observation or photographs will only be done with your permission. You can decide the choice of activity, time and place.

The interview should last for about 30 minutes and could be arranged in more than one session, if it would suit you better. It may be recorded with your permission. The observation may take longer – over several days

Anything you share will be anonymised. It will not be possible to identify you or your business from quotations or photographs in the study report.

You will be free to end the interview at any time.

Are there any benefits or risks of taking part?

We hope that taking part in the study will be an interesting experience for you.

There are no known health risks or specific benefits of taking part in the study.

The study will abide by UK government and local COVID-19 restrictions.

What happens when the study ends?

All the information from the study, including your views, will be analysed and used to prepare a final report. This information may be used to improve the experience of food in your local area.

The researcher may ask for your permission to contact you again if there is a need to check some details. If you agree, your contact details will be kept securely until the end of the study period (September 2021). It will not be shared with anyone or used for any other purposes apart from the study.

What if it is not for me?

If you feel unsure or uncomfortable about taking part, please ask questions. Your views are important.

You can change your mind at any time without giving any reason, it will not affect your rights.

Contact details

To questions or would like to learn more, please contact me:

'Tomi Ajetunmobi
Research Student
Department of Public Health, Environment and Society, Faculty of Public Health Policy,
London School of Hygiene and Tropical Medicine, 15-17 Tavistock Place
London WC1 9SH

Email: tomi.ajetunmobi@lshtm.ac.uk
Text: 079 2301 0863

If you have concerns and would like to speak to someone else, please contact my supervisor:

Professor Matt Egan
Department of Public Health, Environment and Society, Faculty of Public Health Policy
London School of Hygiene and Tropical Medicine, 15-17 Tavistock Place
London, WC1 9SH

Email: matt.egan@lshtm.ac.uk
Text: 0207 927 2145

Photography workshop:

Changing places, people and food

Information Leaflet

My name is 'Tomi. I am a research student at the London School of Hygiene School of Hygiene and Tropical Medicine (LSHTM).

This leaflet provides information about my study: 'Changing places, people and food'.
You can discuss this leaflet with others and ask questions.

You are free to decide whether or not to take part.

Thank you!

What is the photography workshop about?

This workshop is about ***how you get food in your local area***.

Why is this important?

Everybody eats, so where and how we get food is important.

At this workshop, you can share your experiences of food, food places and any changes you have noticed or would like to see in your local area, using photographs.

The results of the workshop will be shared with local decision makers.

What will I do?

You will be given information about the workshop and you can decide if you want to join.

If you agree to join the workshop, you will need to sign a consent form (as part of LSHTM ethics rules) and attend two workshops, one-week apart, in line with UK government and local COVID-19 restrictions.

Each workshop should last for about 2.5 hours and may be recorded – with your permission.

In ***Workshop 1***, we will tell you more about the project and give you a camera, photography training and some 'homework'.

After one week, we will have ***Workshop 2.*** In workshop 2, you will talk about your photographs from the homework with other group members and agree the next steps.

At the end of the workshop you will return the camera and receive a £40 gift voucher, to thank you for your time.

You may also be invited to discuss your views one-to-one (individual interview) with the researcher.

One week

Homework (take photos)

e.g. photographs of food and food places

Workshop 2 (week 2):

Bring your photos to share with the group

Workshop 1 (week 1):

Camera training, photographs practice, discussion of photographs and homework

Follow up interview (optional)

Workshop plan

What are the benefits or risks of taking part?

We hope that taking part in the study will be an interesting experience for you and improve knowledge of local food spaces.

There are no known health risks or specific benefits of taking part in the study. The study will abide by UK government and local COVID-19 restrictions.

What if it is not for me?

You can change your mind at any time without giving any reason, it will not affect your rights**.

***Any information that you have shared as part of the workshop may still be used.*

Tips and tricks for taking photographs

PLEASE DO…

- Think about what the picture you would like to take.
- Think about 'who' may be in the picture – do you need to take permission?
- Ask for permission – if you need it.
- Check that your camera is on and charged.
- Choose carefully what will be the best way to show it.
- Is there enough light?
- What is the best way to frame it ('rule of threes').
- Should it be portrait or landscape?
- Is your shot in focus? Lock the focus to create a 'sharp' picture.
- Try different angles and view points Do you need to move closer?
- Take your shot with a steady hand.
- Enjoy taking the photographs!

PLEASE DO NOT…

- Take close-up photographs of people without their permission (crowd shots are okay).
- Take photographs of children or young people without seeking their permission or permission from their parents or other responsible adults/guardian.

Questions to ask about your photo*:

- What do you **See** here?
- What is really **Happening**?
- How does this relate to **Our** lives?
- Why is this a **Problem**?
- Why is this **Good**?
- What can we **Do** about it?

(*Adapted from Wang, 2003).

This photography workshop is part of a research project at the London School of Hygiene and Tropical Medicine and is funded by the National Institute of Health Research (NIHR) School of Public Health Research.

If you would like to learn more, please contact:

'Tomi Ajetunmobi
Research Student
London School of Hygiene and Tropical Medicine
15-17 Tavistock Place
London
WC1 9SH

Email: tomi.ajetunmobi@lshtm.ac.uk
Text: 079 2301 0863

If you would like to speak to someone else, please contact my supervisor:

Professor Matt Egan
Public Health, Environment and Society,
Faculty of Public Health Policy
LSHTM, 15-17 Tavistock Place
London, WC1 9SH
Email: matt.egan@lshtm.ac.uk
Text: 0207 927 2145

Interview topic guide: Retailers

(Anticipated time: 30 – 40 minutes/ Less than one hour)

General introductions

I am a research student at the London School of Hygiene and Tropical Medicine. My study is on the changes that occur in food spaces as a result of changes to the population. I would like to find out about how changes in the population may have influenced food businesses in this local area.

Retail experience

1. How long have you been a retailer in this area?
2. Have you traded in another area before, if so where and what type of things did you trade in?
3. What is your primary trade?
4. What is your country of birth?
5. How many languages do you speak?
6. Do you live in the community?

Retail practices

1. Opening hours? And busy times? – has it always been like this or changed recently (if so, why)?
2. 'Special services' - credit facility, home delivery, Healthy food/other vouchers
3. What kind of support do you receive from the LA or other organisations?
4. Who are your core customers (broadly women/men, children/ethnic and age groups)?
5. What types of information do customers require about the food stuff you stock?

   PROBE: level of information provided and why e.g. customers wanting to try new ingredients OR requesting information on the origin or types of food

Changing Retail Practices

1. How has business changed over time? Why i.e. changes to client base or location or economy?
2. Has the shop rent changed over time?
3. In your opinion, how has this affected food businesses in the area?
4. What changes have you had to make?

   (PROBE changes in types of foodstuff/labelling/diversity of goods for immigrant consumers or increase in diversity of employee or skill or knowledge base)
5. How did you find out about these changes?

   (PROBE: what sources of information prompts changes to practices, requests from customers etc)?

Observe

- Range of food displayed – set up/language/shelf life of goods/prices
- Other services provided? E.g. advice, phone cards
- Discounts or Deals- how are these advertised
- Peak periods
- Clientele

Interview Topic Guide: Local Authority

Anticipated time: 1-1.5 hours.

General introductions

I am a research student at the London School of Hygiene and Tropical Medicine. My title of my study is 'The impact of migration on the food environment i.e. how people changes place'. I would like to find out about how changes in the population due to migration have influenced the local food environment.

Thank you for making time for this interview,

Overview of the department/unit

- Please could you start by telling me about the remit of your department? (PROBE ROLE: Public health officer, environmental health or procurement, business enterprise)
- What policies do you work on?
- How do you set your priorities? OR how do you identify issues that require attention (Is the remit covered by the JSNA or the work of other units in the LA)?
- To achieve your objectives, what types of data do you use?
- Is your work linked to other departments, what are some of the external organisations you work with?
- How does this change, with priorities or government policies (how are new linkages identified or formed)?

Current activities, priorities and adaptations (tailored to the Stakeholder)

- Which of the policies are currently a priority to the Local authority?
- What work programs/packages are designed to address this?
- How have you implemented the policies to the include the diverse sectors in the community – for example, have there been targeted approaches at ethnic minority populations or is the impact of this monitored for ethnic minority populations (or specific groups in the population)
- How are target groups identified?
- What are the main challenges associated in your role (Linked to the food environment) i.e. farmers markets, allotments, retail sectors?
- How do you monitor and manage changes in these sectors?
- How do you identify issues that require attention (e.g. waste, support for food banks etc)?
- How is performance monitored?
- What factors influence the procurement or commissioning of food-related services in the LA (school foods, gardening activities, farmer's markets, allotments, waste management)?

Business Enterprises

- How long might a new food business in the area last?
- What are the main challenges for new food start-ups?
- How are new and existing food businesses supported?
- Are there other community led initiatives that are food related such as allotments or food banks or community centres, which receive support from the council? If so, how?

Exhibition Brochure – Hull

About the Exhibition

Thank you for joining the Changing People, Places and Food Exhibition.

The exhibition is the outcome of Photovoice workshops held with Hull residents as part of a research project, which is exploring the interaction between people and (food) places and what this means for public health.

During the workshops, participants captured and shared their experiences of food and food places in Hull through photographs. The photographs contributed by workshop participants are displayed at this exhibition with some comments by the photographer /other participants.

Three broad themes were identified from the photographs and workshops:

- Food legacies: food or food places that allow us to gain knowledge, share memories and create (cultural) experiences
- Eating well: Eating to feed the body (safely) and the soul (socially)
- Food spaces: Food places and their meanings

The workshops and exhibition are part of a research project conducted in the United Kingdom by researchers at the London School of Hygiene and Tropical Medicine (LSHTM), funded by the National Institute of Health Research (NIHR) School of Public Health Research and kindly supported by the Goodwin Development Trust and Open Doors Hull, Princes Street Avenue Methodist Church.

Acknowledgements: A **special thank you** to all the participants of the workshops from the Open Doors Hull and the Goodwin Development Trust for being a part of this project

For further information, please contact 'Tomi (tomi.ajetunmobi@lshtm.ac.uk)

Exhibition Brochure – Hackney

About the Exhibition

Thank you for joining the Changing People, Places and Food Exhibition - Hackney.

The exhibition is the outcome of Photovoice workshops held with Hackney residents as part of a research project, which is exploring the interaction between people and (food) places and what this means for public health.

During the workshops, participants captured and shared their experiences of food and food places in Hackney through photographs. The photographs contributed by workshop participants are displayed at this exhibition with some comments by the photographer /other participants.

Four main themes were identified from the photographs and workshops:

Growing food: experiences of growing food – herbs, allotments and gardens.

Sourcing food: experiences of shopping, within and outside the neighbourhood.

Eating food: featuring consumption within and outside the home.

Managing food waste: capturing views of sustainable consumption.

The workshops and exhibition are part of a research project conducted in the United Kingdom by researchers at the London School of Hygiene and Tropical Medicine (LSHTM), funded by the National Institute of Health Research (NIHR) School of Public Health Research and kindly supported by Xenia and the Shoreditch Trust (including the Waterfront Restaurant).

Acknowledgements: A special thank you to all the participants of the workshops: Shoreditch Bumps Buddies, Shoreditch Blue Marble Trainees and the Xenia women's group for being a part of this project.

For further information, please contact 'Tomi (tomi.ajetunmobi@lshtm.ac.uk)

Appendix 5: Quantitative Results – Detailed notes

1.1 High Fat, Sugar and Salt products

This measure was defined as the proportion of healthier kilocalories obtained from food household purchases recorded by each household in the Kantar FMCG panel household based on the UK Department of Health/Food Standards Agency (FSA) Nutrient Profiling Model (NPM).

The UK Department of Health- NPM was designed by as a tool for the Office of Communication (OfCom) to regulate food and drink advertising to children aged 4 -15 years i.e. set thresholds for foods high in fats, sugars and salt (HFSS); there were no exemptions. It is a relatively sensitive and theoretically sound measure, which has been validated (Garsetti et al, 2007).

The model developed with expertise from the FSA and an independent Scientific Advisory Committee on Nutrition (SACN) was determined by scoring foods based on their nutrient content and matching the scores to the child impacts of televised broadcasts i.e. viewing rates. Griffiths, et al (2018) provide a detailed account of the development of the nutrient profiling scheme. Points were allocated for nutrients based on 100g content of food/beverages (or 100ml where applicable). Food measured in units such as eggs were converted using equivalent base-weights (i.e. base-weight per gram, ml, pounds, drained weights) or approximate 100g contents estimated using nutrient values per unit/serving provided by Public Health England (PHE,2016). A maximum of 10 points could be awarded for each food product for energy, saturated fat, total sugars and sodium designated as 'A' or a maximum of 5 points for foods in group 'C' for proteins, fruit and vegetables. In addition, fruits, vegetables and nuts (FVN) were scored for fibre content and allocated a maximum of 8 points. Food products that scored a total of 11 or more 'A' points could not score points for protein unless it had scored up to 5 points for FVN. Group A and C scores were combined to obtain on overall score. Foods with a total score of four or more and beverages that scored more than one point were classified as 'less healthy' (Griffiths et al, 2018).

For the analyses, pre-prepared extracts and codes were used to categorise classes of nutrients (kilocalories) obtained from 35 predefined NPM food groups (personal communication, N Berger). The extract was an aggregated household record for each of the

35 NPM food groups (kilocalories) based on the overall score (not included in the extract) calculated from the nutrient profiles broadly defined as 'healthy' or 'less healthy'. There were 18 'healthier' food groups and 17 'less healthy' food groups. Foods such as cheese, fruits, and vegetables where more than 90% of the products comprised either 'healthier' or 'less healthy' were allocated to the relevant groups and were not differentiated by their scores (described by Berger et al, 2019). The total household kilocalorie(s) was derived by summing up the kilocalories from each of the predefined food groups.

The proportion of kilocalories from the 'healthier' and 'less healthy' purchases was defined for each household as the sum of all relevant subgroups divided by the total kilocalories purchased for each household:

$$\frac{\text{Household kilocalories for 'healthy' /'less healthy' foods (sum predefined groups)}}{\text{Total household kilocalories}} \times 100\%$$

The prepared file was then merged using the unique household number to the linked Census-Kantar FMCG Profile file (including deprivation look-up) that comprised the demographic and other socio-economic characteristics of the households. This formed the NPM file that was used for further analyses.

1.2 Fruit and Vegetables

For this study, the kilocalories from fruits and vegetables was defined using the pre-defined categories for fresh and canned fruits and vegetables in the Kantar FMCG panel (adapted from the analyses of UK Nutrient Profile Model) as a proportion of all kilocalories purchased by a household. Fruits and vegetables that were composite parts of other foods, such as ready meals, could not be included:

$$\frac{\text{Household energy from fruits and vegetables (kcals)}}{\text{Total household energy from all foods (kcal)}} \times 100$$

1.3 Ultra-Processed Foods

The NOVA classification for this study was developed using the description – including supplementary material - provided by Monteiro et al (2016) and recent work by Vandevijvere

et al (2019) and Rauber et al (2019); adapting code previously used to classify Kantar products by the London School of Hygiene and Tropical Medicine (LSHTM), Population Health Innovation (PHI) Lab (personal communication N. Berger).

The code, which comprised a 47-group classification (adapted from Pechey et al, 2013) and a more detailed 80-group classification was reviewed and revised to provide a NOVA classification for all foods and beverages into four main NOVA categories defined as: 'unprocessed natural foods', 'processed culinary ingredients', 'processed' and 'ultra-processed' foods (Monteiro et al, 2016), applied to a pre-prepared extract of the Kantar FMCG panel file comprising household product level purchases[5]. The 47-group classification code comprised broad categories such as meat and poultry were re-coded into more detailed subgroups identifying different cuts of meat, fish and poultry including a sub-group for processed meats/meat products, such as smoked or breaded fish, in the 80-group classification.

For the NOVA classification, I created additional subgroups for products that had been grouped into fairly broad categories such as 'slimming' products' or 'other foods', 'cereals' or 'yoghurts' (to separate ultra-processed varieties e.g. flavoured varieties) by manually delineating relevant market and submarket codes where necessary using individual product code descriptions to split products into the relevant NOVA categories based on the level of processing (e.g. to separate 'natural', 'set', '100%' or 'full fat' yogurts from other types of yoghurts)[6]. A new sub-category was also included for water, alcoholic beverages and non-alcoholic beverages (e.g. flavoured coffees) – Rauber et al, 2019).

In addition to the supplementary notes from other studies, the components of some food products, such as 'thins' were verified by examining the listed brands with the highest frequency in a particular market or submarket to identify evidence of ultra-processing, such as the inclusion of ingredients that would not be found in a 'normal household kitchen' using the listed ingredients from the website of large supermarkets in the UK or reviewing the

[5] This 'sub-prep' file comprised product level purchases with details of the product by product code, market and submarket code and estimated kilocalories for each household.

[6] Three separate look-up files (csv) comprising market, submarket and product id codes respectively were used to identify relevant groups. Different rules were used to identify specific products such as the use of 'set', 'natural' and variations of such descriptions to distinguish flavoured from natural, 100% full fat yoghurts.

production process where relevant (Monteiro, 2018). The adapted NOVA code was validated by a colleague, Alexandra Kalbus, working on a more recent Kantar dataset and further reviewed in with other researchers from the LSHTM PHI lab. Disagreements were resolved in discussion and additional revisions made for codes to identify flavoured yoghurt, fish in sauce, flavoured nuts, unsweetened fromage frais, ready meals, including packaged salads and baking products (i.e. sprinklers, ready to eat icing etc).

The final NOVA classification code comprised 106 separate categories that included the original 80-group classification with additional subgroups prefixed by '1' for processed foods and '2' for ultra-processed foods where relevant (Appendix 5). The final file was aggregated to produce a single household record by kilocalorie for each NOVA category; which was merged to the linked Census-Kantar FMCG Profile file (including deprivation look-up) that comprised the demographic and other socio-economic characteristics of the households (linked by the unique household number). The merged file was the final analyses file.

The proportion of kilocalories for ultra-processed foods was derived by dividing the kilocalories obtained from foods classified as ultra-processed from the total kilocalories purchased for each household in the panel i.e.

$$\frac{\text{Household energy from ultra-processed foods NOVA classification (kcals)}}{\text{Total household energy from all foods (kcal)}} \times 100$$

1.4 Food Diversity

Dietary diversity as a measure of diet quality has been operationalised in different ways. The most frequent method employed is the counts of different food products or groups of good products. The Berry Index, also known as the measure of evenness, assesses the variety in the distribution of foods, weighted by the energy content or volume or can be adjusted by a health value; a higher evenness score is associated with greater diversity (Theile and Weiss, 2003; Drescher et al,2007; Conklin et al, 2016 and Kuczmarsaki et al, 2019). In addition, dietary diversity has also been assessed using the measure of dissimilarity that refers to the unique characteristics of foods – depending on the outcomes of interest. Higher dissimilarity scores has been associated with greeater diversity in the attributes of food consumption (Kuczarmarsaki et al, 2019).

For this study, the Berry index or diversity measure of evenness, weighted by the health index (Drescher et al, 2007; Kuczmarsaki et al, 2019); adapted from the UK Eatwell Guidelines (PHE, 2016), was used to investigate the association between migrant density and diet quality of the panel members.

The Evenness Score was calculated using the formula:

$$I - \sum_{i=1}^{n} S_i^2 \times hF$$

Where

si = share of the food of total energy

n= total energy for all items consumed

hF = health factor

The health factor was derived from the UK Eatwell Guidance (Figure 4, PHE 2016) adapting the methods used by Drescher et al., based on guidance by the German Nutrition Society (2007) and Vadiveloo using guidance by the United States Department for Agriculture (2019) and other research (Kuczmarsaki et al, 2019 and Conklin et al, 2016).

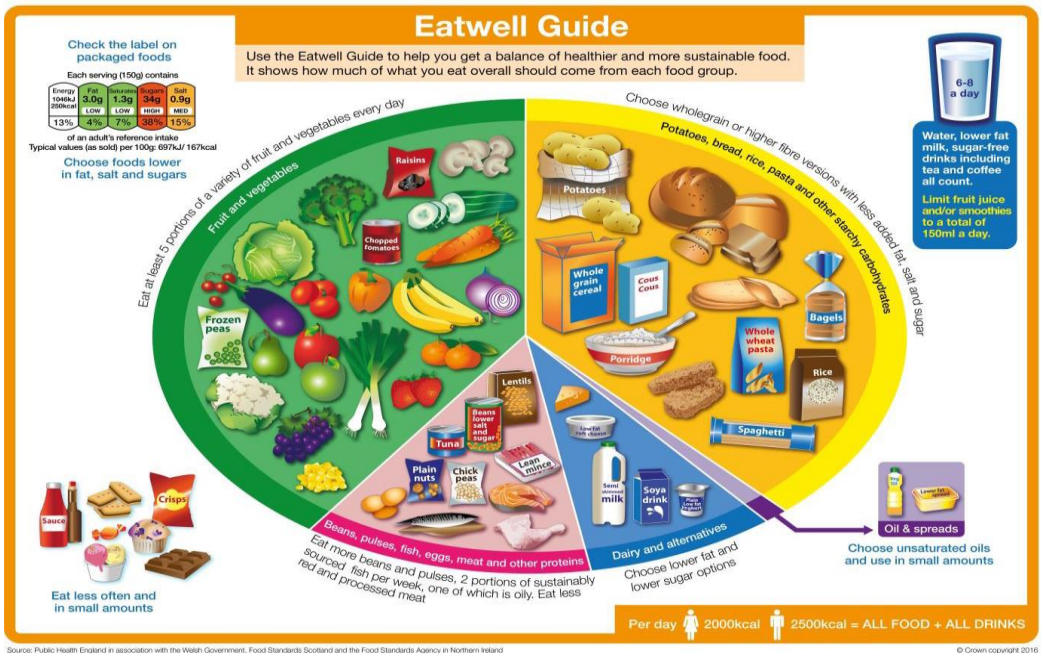


Figure 4: UK Eat well Guide (Source: PHE, 2016)

The UK Eatwell Guidance is the national food model to support dietary choices that achieve recommended dietary targets developed in 2016. It comprises five segments with segment sizes based on the model reported by the COMA Diet and Cardiovascular disease project and replaced the Eatwell Plate, which had been introduced in 2000. The revised guidance featured five main segments with suggested weights (g) of food:

- Fruit and vegetables (39%),
- Potatoes, bread, rice, pasta and other starchy carbohydrates (37%)
- Beans, pulses, fish, eggs, meat and other proteins (12%)
- Dairy and alternatives (8%)
- Oils and spreads (1%)
- Foods to eat less often and in small amounts (outside the main segment – 3%)

For this study, the code for the 80- food group classification used for previous Kantar analyses was revised to create a 26-group classification across the five segments recommended in the UK Eatwell Guide, based on the adapting methodology by Drescher et al. (2007) for the German population. The food groups comprised 25 food groups of calorie-relevant foods. The last group, which comprised food purchases for water and food packaging that should have no calories were excluded from the total energy count for the analyses.

A health factor was calculated by assigning weights to different foods within each of the UK Eatwell food segments. These weights were based on notes provided in the guidance notes. For example, the recommendation to eat more than two portions of fish per week, one of which should be oily (i.e.140 g), gave fish a greater weighting to other proteins in the group or to limit the consumption of food that are high in free sugars and salts, hence a relatively lower weighting for soft drinks, breakfast cereals and ready meals, ham and sausage – Table A.

The food diversity score, i.e. Evenness or Berry Index score for the food purchases in the panel, weighted by a health factor, was divided by the maximum score that could be obtained overall (i.e. 0.1332 to ensure that the score ranged between 0 and 1 - see Kuczmarsaki et al, 2019) for each segment in the adapted UK Eatwell guidance and summed up to obtain the total diversity/Evenness score for each household.

The Census 2011 population data was linked to the look up tables for small geographical areas (LSOA and datazones) and the UK-wide adjusted deprivation scores to include relevant geographical units (postcode) and area deprivation measures. The postcode district, derived from the full postcode on the Census data and LSOA/data-zone look files, was used to create a new aggregate index of deprivation score weighted by the *size of the population within each postcode district* (i.e. first three letters of the postcode) replacing the score based on the geographical unit of the LSOA or datazone. The formula for creating the new weighting as recommended by Office of National Statistics (ONS, 2019) was:

$$\frac{\textit{UK wide deprivation score x LSOA population}}{\textit{sum of population within the postcode districts}}$$

The extent of deprivation was calculated by classifying the re-weighted scores into deprivation quintiles used as a measure of 'relative' deprivation by postcode district.

Table A: Health factors for food groups derived from the UK Eatwell Plate

UK Eatwell Food Segment	Share of UK Eatwell Food segment	Health factor
Fruit and vegetables	39%	
Fruit	0.39 x 0.33	0.1287
Vegetables	0.39 x 0.33	0.1287
Fruit/vegetable preserves and relishes (including canned)	0.39 X 0.1652	0.0644
Fruit juices	0.39 x 0.1652	0.0644
Starchy carbohydrates: Potatoes, bread, rice, pasta etc.	37%	
Potato and potato products	0.37 x 0.36	0.1332
Whole wheat products and grains, including porridge	0.37 x 0.28	0.1036
Breads – various	0.37 x 0.20	0.0740
Rice, pasta, noodles and other cereals	0.37 x 0.20	0.0740
Breakfast cereals	0.37 x0.12	0.0444
Ready meals	0.37 x 0.04	0.0148
Fish, dairy, eggs, meats	12%	
Fish	0.12 x 0.36	0.0432
Dairy	0.12 x0.28	0.0336
Meats/Eggs	0.12 x 0.20	0.0240
Ready meals	0.12 X0.12	0.0144
Ham/Sausage	0.12 x 0.04	0.0048
Legumes/Other proteins	8%	
Legumes	0.08 x 0.35	0.0280
Nuts and Seeds	0.08 x 0.32	0.0256
Plant based drinks	0.08 x 0.33	0.0264
Oils and Spreads	1%	
Oils and baking ingredients	0.01x0.60	0.0060
Suet/Lard/Butter	0.01 X 0.24	0.0024
Margarine	0.01x 0.12	0.0012
Chocolate spread	0.01 x 0.04	0.0004
Foods to eat less often	3%	
Sweets and Confectionery	0.03 x 0.80	0.024
Alcoholic and Non-alcoholic drinks e.g. fruit juices, sodas	0.03 x 0.20	0.006

Source: Adapted from Drescher et al,2007, Eatwell Guidance, PHE 2016

Table B: UK Department of Health Nutrient Model Profile for Kantar FMCG 2012

Food Group Description	NPM Designation	Total kilocalories (%)
Bread products	'Healthier'	8.7%
Pasta, rice and other grains	'Healthier'	7.1%
Ready meals /convenience food	'Healthier'	5.8%
Milk – reduced-fat	'Healthier'	4.4%
Proteins (egg, fish, white meat, meat substitutes)	'Healthier'	4.0%
Fresh fruits	'Healthier'	3.1%
Breakfast cereals	'Healthier'	2.3%
Vegetables, excl. legumes and potatoes	'Healthier'	2.2%
Legumes, nuts and seeds	'Healthier'	1.5%
Milk – high-fat	'Healthier'	1.4%
Processed fish and meat	'Healthier'	1.3%
Other dairy	'Healthier'	1.1%
Red meat	'Healthier'	1.2%
Dairy-based drinks	'Healthier'	0.3%
Other drinks	'Healthier'	0.3%
Sauces and condiments	'Healthier'	0.1%
Tinned fruits	'Healthier'	0.1%
Cheese	'Healthier'	0.0%
Puddings and biscuits	'Less healthy'	10.1%
Fat and oil	'Less healthy'	8.8%

Chocolates and confectionary	'Less healthy'	5.7%
Savoury snacks	'Less healthy'	4.1%
Cheese	'Less healthy'	3.1%
Others (sugar, table salt, slimming products)	'Less healthy'	3.1%
Ready meals/ convenience food	'Less healthy'	3.0%
Alcohol	'Less healthy'	3.0%
Breakfast cereals	'Less healthy'	2.5%
Processed fish and meat	'Less healthy'	2.0%
Red meat	'Less healthy'	1.2%
Juices	'Less healthy'	1.6%
Sauces and condiments	'Less healthy'	1.5%
Other drinks	'Less healthy'	1.5%
Bread products	'Less healthy'	1.4%
Other diary	'Less healthy'	1.3%

Sources : Kantar FMCG 2012

Table C: NOVA Classification for Ultra-processed foods – Kantar FMCG 2012

Food groups - Description	Non-food	Un-processed/ Natural	Culinary foods	Processed	Ultra-processed	Total products
Fruits - citrus	0	x	0	0	0	297,032
Fruits - apples/pears	0	x	0	0	0	498,765
Fruits - bananas	0	x	0	0	0	539,325
Fruits - grapes	0	x	0	0	0	243,564
Fruits - Berries	0	x	0	0	0	274,381
Fruits - Nectarines, peaches, plums	0	x	0	0	0	149,408
Fruits - Pineapples	0	x	0	0	0	36,511
Fruits - Other	0	x	0	0	0	261,488
Vegetables - Tomatoes	0	x	0	0	0	444,530
Carrots	0	x	0	0	0	314,876
Potatoes	0	x	0	0	0	630,455
Onions	0	x	0	0	0	264,994
Other Vegetables (Cauliflower, cabbage, broccoli, lettuce)	0	x	0	0	0	2,067,904
Canned tomatoes	0	0	0	x	0	220,681
Canned beans/lentils - various	0	0	0	x	0	168,516
Frozen or dry pulses	0	x	0	0	0	252,278
Frozen chips/potato products	0	0	0	0	x	206,272

Food groups - Description	Non-food	Un-processed/ Natural	Culinary ingredients	Processed	Ultra-processed	Total products
Processed vegetables (pickled, Prepared salads, canned)	0	0	0	x	0	873,287
Breads	0	0	0	0	x	1,208,343
Porridge	0	x	0	0	0	41,931
Cereals - ready to eat	0	0	0	0	x	599,627
Pasta - dry	0	x	0	0	0	197,773
Rice - various	0	x	0	0	0	113,742
Flour	0	x	0	0	0	96,120
Fresh pasta with fillings /Bread- Frozen part baked,naans, tortillas, flatbreads, focaccias etc)	0	0	0	0	x	478,410
Whole milk	0	x	0	0	0	290,993
Skimmed milk	0	x	0	0	0	1,027,834
Non-dairy/Plant based milk	0	0	0	0	x	34,260
Yogurt - Natural set, 100% milk	0	x	0	0	0	51,362
Flavoured yogurts	0	0	0	0	x	666,478
Cream	0	x	0	0	0	245,332

Food groups - Description	Non-food	Un-processed/ Natural	Culinary ingredients	Processed	Ultra-processed	Total products
Cheese - including processed cheese	0	0	0	x	0	788,625
Butter	0	0	x	0	0	217,019
Buttermilk	0	x	0	0	0	2,339
Cooking oils, suet, lards	0	0	x	0	0	138,081
Goat milk	0	x	0	0	0	7,145
Eggs	0	x	0	0	0	354,472
Beef Meat	0	x	0	0	0	355,841
Beef - Roasting	0	x	0	0	0	35,516
Processed red meat	0	0	0	0	x	563,541
Lamb - chops	0	x	0	0	0	16,173
Lamb - loins/mince	0	x	0	0	0	23,197
Pork - chops, loins, mince	0	x	0	0	0	89,224
Pork joints	0	x	0	0	0	35,271
Pork - Bacon	0	0	0	x	0	96,425
Pork - Ham	0	0	0	x	0	467,738
Poultry - Fresh	0	x	0	0	0	56,490
Poultry - Ultra processed (cooked, breaded etc)	0	0	0	0	x	523,197
Other Fresh meat	0	x	0	0	0	59,865
Meat alternatives	0	0	0	0	x	84,326
Fish - Fresh	0	x	0	0	0	153,735

Food groups - Description	Non-food	Un-processed/ Natural	Culinary ingredients	Processed	Ultra-processed	Total products
Other seafood - smoked or processed	0	0	0	x	0	216,872
Smoked salmon	0	0	0	x	0	25,522
Ready meals - canned pies	0	0	0	0	x	1,554,789
Pizzas - fresh/frozen	0	0	0	0	x	219,103
Chocolate	0	0	0	0	x	1,034,866
Biscuits	0	0	0	0	x	1,194,872
Ice cream	0	0	0	0	x	352,668
Cakes, Puddings, Jellies	0	0	0	0	x	825,379
Sweet snacks	0	0	0	0	x	532,510
Crisps	0	0	0	0	x	464,459
Nuts and dry fruit	0	x	0	0	0	150,911
Other savoury snacks	0	0	0	0	x	753,599
Tea	0	x	0	0	0	184,547
Coffee - instant/decaffeinated	0	x	0	0	0	201,958
Sugar sweetened beverages/drinks - Non-alcoholic	0	0	0	0	x	1,399,844
Water (still)	x	0	0	0	0	74,856

Food groups - Description	Non-food	Un-processed / Natural	Culinary ingredients	Processed	Ultra-processed	Total products
Convenience foods (soups, tortilla, RTE desserts/custard, jellies, ready to use icing sugar)	0	0	0	0	x	413,113
Cooking condiments, herbs, spices (also sugar/salt)	0	0	x	0	0	428,811
Fruit juice (pure)	0	x	0	0	0	268,108
Processed fruit (tinned, snacking, preserves, fillings)	0	0	0	x	0	264,605
Couscous plain	0	x	0	0	0	3,183
Fresh pasta - not filled	0	0	0	x	0	4,357
Unprocessed fromage frais	0	x	0	0	0	3,787
Soft white cheese - processed	0	0	0	x	0	98,897
Fresh/Packaged meats (packaged in protective atmosphere)	0	x	0	0	0	346,600
Pasta - stuffed/with fillings	0	0	0	0	x	35,937
Peanut butter	0	0	0	x	0	30,718
Alcoholic drinks - Processed (beers, wines, cider, sparkling wines)	0	0	0	x	0	636,909
Baking ingredients (baking powder, cream of tartar & flavour extracts)	0	0	x	0	0	12,790

Food groups - Description	Non-food	Un-processed / Natural	Culinary ingredients	Processed	Ultra-processed	Total products
Low calorie preserves	0	0	0	0	x	3,379
Baked beans	0	0	0	0	x	269,220
Potato products/Coated fries	0	0	0	0	x	151,122
Prepared salads (e.g. coleslaw etc) - chilled	0	0	0	0	x	189,677
Muesli, instant porridge other RTE cereals	0	0	0	0	x	479
Couscous flavoured	0	0	0	0	x	19,282
Chilled rice/noodles/ thins/Ethnic foods - tortilla, chapatis, prawn crackers, flatbreads	0	0	0	0	x	352,459
Instant milk	0	0	0	0	x	5,771
Frozen yogurt/fromage frais	0	0	0	0	x	164,238
Ultra-processed cheese	0	0	0	0	x	169,245

Food groups - Description	Non-food	Un-processed/ Natural	Culinary ingredients	Processed	Ultra-processed	Total products
Other foods - non-butter margarine, spreads and canned cream, milkshake mixes	0	0	0	0	x	336,016
Other non-dairy milk (e.g. Oatley)	0	0	0	0	x	1,603
ULT Meats - Cooked/breaded	0	0	0	0	x	149,435
Canned fish in sauce, salads, delis and marinades	0	0	0	0	x	59,281
Fish products - breaded, battered etc	0	0	0	0	x	250,229
Ready meals - 'Ethnic foods/ingredients' Australian, Polish, Russian, Mexican meal kits, desserts/ puddings etc	0	0	0	0	x	676,561
Morning goods	0	0	0	0	x	308,781
Other morning goods (toasted pastries, cereal/fruit bars)	0	0	0	0	x	179,286
Flavoured nuts (sweetened, coated, caramelised etc)	0	0	0	0	x	177,496
Flavoured/speciality coffees (spiced, mocha etc)	0	0	0	0	x	70,732
Low calorie drinks/flavoured etc	0	0	0	0	x	27,125

Food groups - Description	Non-food	Un-processed/ Natural	Culinary ingredients	Processed	Ultra-processed	Total products
ULT Alcohol (liqueurs and spirits/fortified wines)	0	0	0	0	x	161,029
Water - flavoured/carbonated)	0	0	0	0	x	139,774
Cooking sauces, syrups, packet stuffing, ambient condiments	0	0	0	0	x	1,554,794
Low fat products	0	0	0	0	x	364,730
Food packaging (for home baking e.g. cake boards, boxes, cases)	x	0	0	0	0	6,998

Sources : Kantar FMCG 2012,

Table D: Multivariate: Migrant Density and UK NPM 'Less Healthy' kilocalories

Proportion of 'less Healthy (adjusted)	Coefficient (95% CI)	P > t
Migrant density (Continuous)	-0.001 (-0.020,0.018)	0.913
Household size	0.481 (0.310,0.652)	<0.001
Household type		
Adults only	Reference	1.000
Children present	-0.261 (-0.501, -0.021)	0.033
Age -main shopper	0.034 (0.021,0.048)	<0.001
Highest Education		
Degree or higher	Reference	1.000
Higher Education	1.254 (0.813,1.695)	<0.001
A-Level	1.129 (0.660,1.598)	<0.001
GSCE	1.282 (0.865,1.699)	<0.001
Other (qualification)	1.180 (0.651,1.709)	<0.001
None	0.815 (0.263,1.367)	0.004
Region		
London	Reference	1.000
Midlands	0.654 (0.092,1.215)	0.023
North East England	0.518 (-0.275,1.310)	0.200
Yorkshire	0.999 (0.391,1.607)	0.001
Lancashire	0.828 (0.187,1.469)	0.011
South England	0.869 (0.276,1.462)	0.004

Proportion of 'less Healthy (adjusted)	Coefficient (95% CI)	P > t
Scotland	2.991 (2.332,3.650)	<0.001
East Anglia	1.401 (0.779,2.023)	<0.001
Wales / West England	0.979 (0.317,1.641)	0.004
South West	1.388 (0.501,2.275)	0.002
UK Quintile IMD		
Least deprived 1	Reference	1.000
2	0.172 (-0.264,0.609)	0.439
3	-0.255 (-0.687,0.178)	0.249
4	0.181 (-0.266,0.628)	0.427
Most deprived 5	-0.168 (-0.647,0.312)	0.494
Ethnicity		
White British	Reference	1.000
Non-White British	-0.173 (-0.691,0.344)	0.511
Tenure		
Owned	Reference	1.000
Mortgaged	0.673 (0.298,1.047)	<0.001
Rented	1.540 (1.142,1.937)	<0.001
Other	1.087 (-0.123,2.297)	0.078

Proportion of 'less Healthy (adjusted)	Coefficient (95% CI)	P > t
Household income		
£0-£9,999pa	Reference	1.000
Proportion of 'less Healthy (adjusted)	Coefficient (95% CI)	P > t
£10,000 - £19,000pa	-0.306 (-0.811, 0.199)	0.235
£20,000 - £29,000pa	-0.212 (-0.773, 0.349)	0.458
£30,000-£39,000pa	-0.628 (-1.243, -0.012)	0.046
£40,000-£49,000pa	-0.592 (-1.269, 0.085)	0.086
£50,000 +pa	-0.826 (-1.506, -0.145)	0.017
Social grade		
AB: Professional	Reference	1.000
C1: White collar	0.330 (-0.064,0.725)	0.101
C2: Skilled manual	0.537 (0.060,1.015)	0.027
D: Semi-skilled /manual	0.865 (0.322,1.409)	0.002
E: Unskilled/manual	0.924 (0.302,1.547)	0.004

Sources : Kantar FMCG 2012, Abel et al, 2016, Census 2011

Table E: Multivariate: Migrant Density and Fruit and Vegetable (kilocalories)

Fruit and Vegetable kilocalories	Coefficient (95% CI)	P > t
Migrant density	0.011 (0.004, 0.019)	0.003
UK Quintile IMD		
Least deprived 1	Reference	1.000
2	-0.198 (-0.370, -0.026)	0.024
3	-0.127 (-0.297, 0.043)	0.144
4	-0.381 (-0.557, -0.205)	<0.001
Most deprived 5	-0.472 (-0.661, -0.283)	<0.001
Household size	-0.549 (-0.609, -0.489)	<0.001
Household type		
Adults only	Reference	1.000
Children present	0.447 (0.270, 0.623)	<0.001
Age -main shopper	0.020 (0.015, 0.025)	<0.001
Highest Education		
Degree or higher	Reference	1.000
Higher Education	-0.680 (-0.854, -0.506)	<0.001
A-Level	-0.687 (-0.872, -0.502)	<0.001
GSCE	-0.925 (-1.089, -0.761)	<0.001
Other (qualification)	-0.873 (-1.081, -0.665)	<0.001
None	-1.173 (-1.390, -0.955)	<0.001

Fruit and Vegetable kilocalories	Coefficient (95% CI)	P > t
Region		
London	Reference	1.000
Midlands	-0.226 (-0.447, -0.004)	0.046
North East England	-0.383 (-0.695, -0.071)	0.016
Yorkshire	-0.303 (-0.542, -0.063)	0.013
Lancashire	-0.312 (-0.564, -0.059)	0.016
South England	-0.110 (-0.343, 0.124)	0.357
Scotland	-0.651 (-0.910, -0.391)	<0.001
East Anglia	-0.248 (-0.494, -0.003)	0.047
Wales / West England	-0.271 (-0.532, -0.010)	0.042
South West	-0.030 (-0.379, 0.320)	0.868
Ethnicity		
White British	Reference	1.000
Non-white British	-0.805 (-1.009, -0.601)	<0.001
Tenure		
Owned	Reference	1.000
Mortgaged	-0.458 (-0.606, -0.311)	<0.001
Rented	-0.905 (-1.062, -0.749)	<0.001
Other	-0.543 (-1.020, -0.066)	0.026

Fruit and Vegetable kilocalories	Coefficient (95% CI)	P > t
Household income		
£0-£9,999pa	Reference	1.000
£10,000 - £19,000pa	0.141 (-0.057, 0.340)	0.163
£20,000 - £29,000pa	0.240 (0.019, 0.460)	0.033
£30,000-£39,000pa	0.379 (0.138, 0.620)	0.002
£40,000-£49,000pa	0.384 (0.119, 0.650)	0.004
£50,000 +pa	0.622 (0.356, 0.888)	<0.001
Social grade		
AB: Professional	Reference	1.000
C1: White collar	-0.222 (-0.377, -0.066)	0.005
C2: Skilled manual	-0.531 (-0.719, -0.343)	<0.001
D: Semi-skilled/manual	-0.562 (-0.776, -0.348)	<0.001
E: Unskilled/manual	-0.627 (-0.873, -0.382)	<0.001

Sources : Kantar FMCG 2012, Abel et al, 2016, Census 2011

Table F: Multivariate Migrant density and Ultra-processed kilocalories

Ultra-Processed kilocalories	Coefficient (95% CI)	P > t
Migrant density	-0.045 (-0.069, -0.021)	<0.001
UK Quintile IMD		
Least deprived 1	Reference	1.000
2	0.349 (-0.209, 0.907)	0.220
3	0.734 (0.182, 1.286)	0.009
4	1.398 (0.828, 1.969)	<0.001
Most deprived 5	1.553 (0.941, 2.166)	<0.001
Household size	0.175 (-0.044, 0.393)	0.117
Household type		
Adults only	Reference	1.000
Children present	1.102 (0.795, 1.409)	<0.001
Age -main shopper	-0.127 (-0.144, -0.110)	<0.001
Highest Education		
Degree or higher	Reference	1.000
Higher Education	2.267 (1.704, 2.830)	<0.001
A-Level	2.491 (1.893, 3.090)	<0.001
GSCE	3.202 (2.670, 3.735)	<0.001
Other (qualification)	2.608 (1.932, 3.283)	<0.001
None	3.547 (2.842, 4.252)	<0.001

Ultra-Processed kilocalories	Coefficient (95% CI)	P > t
Region		
London	Reference	1.000
Midlands	-0.024 (-0.742, 0.693)	0.947
North East England	0.341 (-0.670, 1.353)	0.508
Yorkshire	-0.730 (-1.506, 0.046)	0.065
Lancashire	-0.269 (-1.087, 0.550)	0.520
South England	-0.398 (-1.154, 0.359)	0.303
Scotland	0.953 (0.112, 1.794)	0.026
East Anglia	-0.386 (-1.180, 0.409)	0.342
Wales / West England	-0.504 (-1.349, 0.341)	0.243
South West	-2.259 (-3.391, -1.126)	<0.001
Ethnicity		
White British	Reference	1.000
Non-white British	-6.145 (-6.805, -5.484)	<0.001
Tenure		
Owned	Reference	1.000
Mortgaged	1.176 (0.698, 1.654)	<0.001
Rented	1.174 (0.667, 1.681)	<0.001
Other	0.209 (-1.336, 1.754)	0.791

Ultra-Processed kilocalories	Coefficient (95% CI)	P > t
Household income		
£0-£9,999pa	Reference	1.000
£10,000 - £19,000pa	-0.644 (-1.289, 0.001)	0.050
£20,000 - £29,000pa	-1.485 (-2.202, -0.769)	<0.001
£30,000-£39,000pa	-1.433 (-2.218, -0.647)	<0.001
£40,000-£49,000pa	-1.508 (-2.372, -0.644)	0.001
£50,000 +pa	-2.833 (-3.702, -1.964)	<0.001
Social grade		
AB: Professional	Reference	1.000
C1: White collar	0.912 (0.408, 1.415)	<0.001
C2: Skilled manual	1.431 (0.821, 2.041)	<0.001
D: Semi-skilled /manual	1.588 (0.894, 2.282)	<0.001
E: Unskilled/manual	1.586 (0.791, 2.381)	<0.001

Sources : Kantar FMCG 2012, Abel et al, 2016, Census 2011

Table G: Multivariate - Migrant Density and Dietary Diversity (Evenness score)

Diet Diversity (Evenness)	Coefficient (95% CI)	P > t
Migrant density	-0.0003 (-0.0004, -0.0001)	<0.001
UK Quintile IMD		
Least deprived 1	Reference	1.000
2	-0.001 (-0.004,0.001)	0.364
3	0.000 (-0.003,0.002)	0.838
4	-0.002 (-0.004,0.001)	0.194
Most deprived 5	-0.002 (-0.005,0.001)	0.119
Household size	0.003 (0.002,0.004)	<0.001
Household type		
Adults only	Reference	1.000
Children present	0.001 (-0.001,0.002)	0.214
Age -main shopper	0.0000 (-0.0001,0.0001)	0.893
Highest Education		
Degree or higher	Reference	1.000
Higher Education	-0.001 (-0.004,0.002)	0.450
A-Level	0.000 (-0.003,0.003)	0.879
GSCE	-0.001 (-0.003,0.002)	0.572
Other (qualification)	-0.002 (-0.006,0.001)	0.135
None	-0.002 (-0.005,0.002)	0.315

Diet Diversity (Evenness)	Coefficient (95% CI)	P > t
Region		
London	Reference	1.000
Midlands	-0.004 (-0.007, -0.001)	0.023
North East England	-0.006 (-0.010, -0.001)	0.023
Yorkshire	-0.005 (-0.008, -0.001)	0.010
Lancashire	-0.009 (-0.012, -0.005)	<0.001
South England	-0.001 (-0.005, 0.002)	0.480
Scotland	-0.008 (-0.012, -0.004)	<0.001
East Anglia	-0.004 (-0.008, -0.001)	0.022
Wales / West England	-0.005 (-0.009, -0.001)	0.007
South West	-0.003 (-0.008, 0.003)	0.296
Ethnicity		
White British	Reference	1.000
Non-white British	-0.015 (-0.019, -0.012)	<0.001
Tenure		
Owned	Reference	1.000
Mortgaged	-0.003 (-0.005, -0.001)	0.009
Rented	-0.012 (-0.014, -0.009)	0.000
Other	-0.007 (-0.014,0.001)	0.071

Diet Diversity (Evenness)	Coefficient (95% CI)	P > t
Household income		
£0-£9,999pa	Reference	1.000
£10,000 - £19,000pa	0.003 (0.000,0.006)	0.063
£20,000 - £29,000pa	0.006 (0.003, 0.010)	0.000
£30,000-£39,000pa	0.009 (0.005, 0.013)	0.000
£40,000-£49,000pa	0.010 (0.006, 0.014)	0.000
£50,000 +pa	0.013 (0.008, 0.017)	0.000
Social grade		
AB: Professional	Reference	1.000
C1: White collar	0.000 (-0.002, 0.003)	0.905
C2: Skilled manual	-0.004 (-0.007, -0.001)	0.005
D: Semi-skilled /manual	-0.004 (-0.007, 0.000)	0.028
E: Unskilled/manual	-0.007 (-0.011, -0.003)	0.000

Sources : Kantar FMCG 2012, Abel et al, 2016, Census 2011